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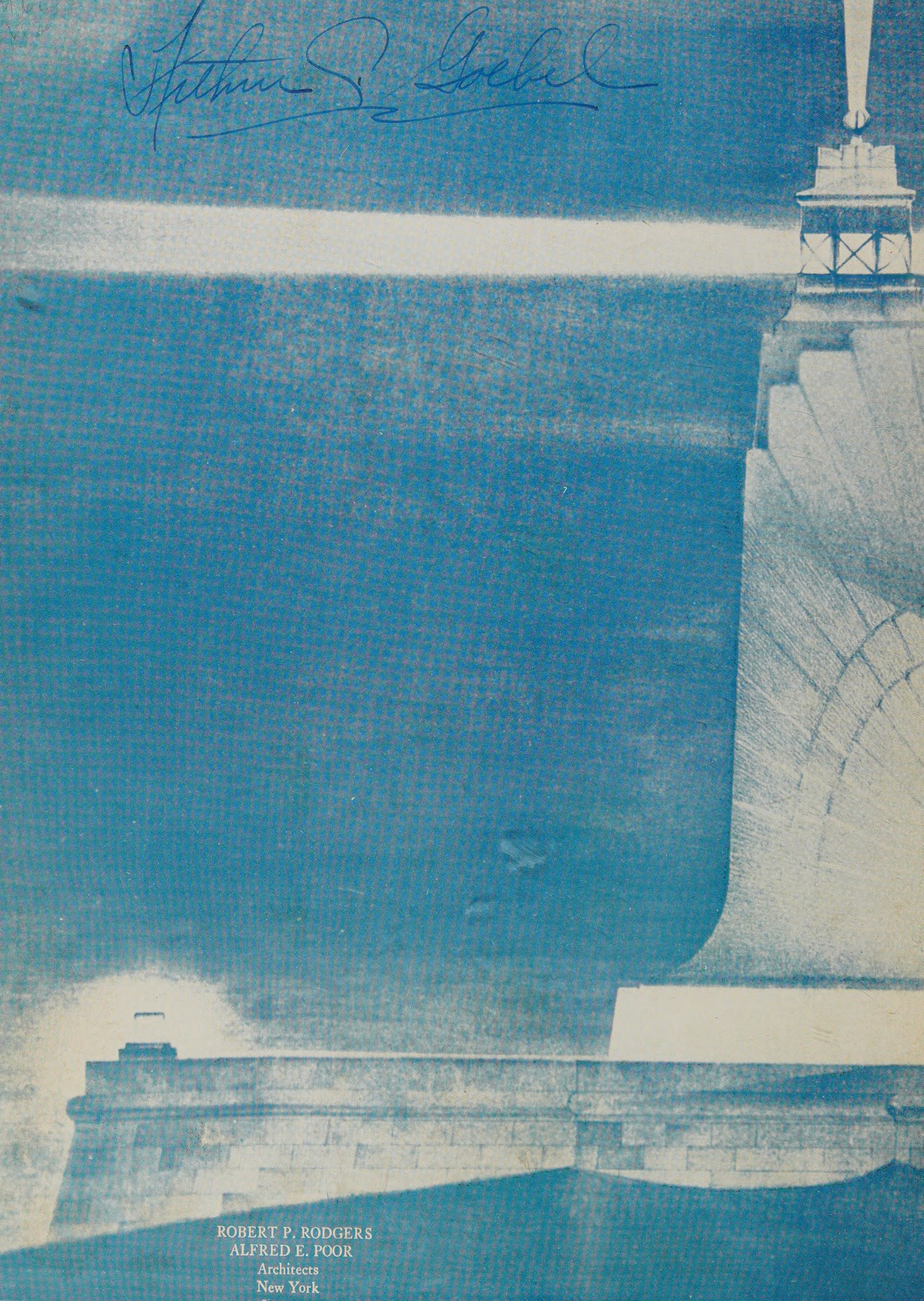

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Birth of Human Flight

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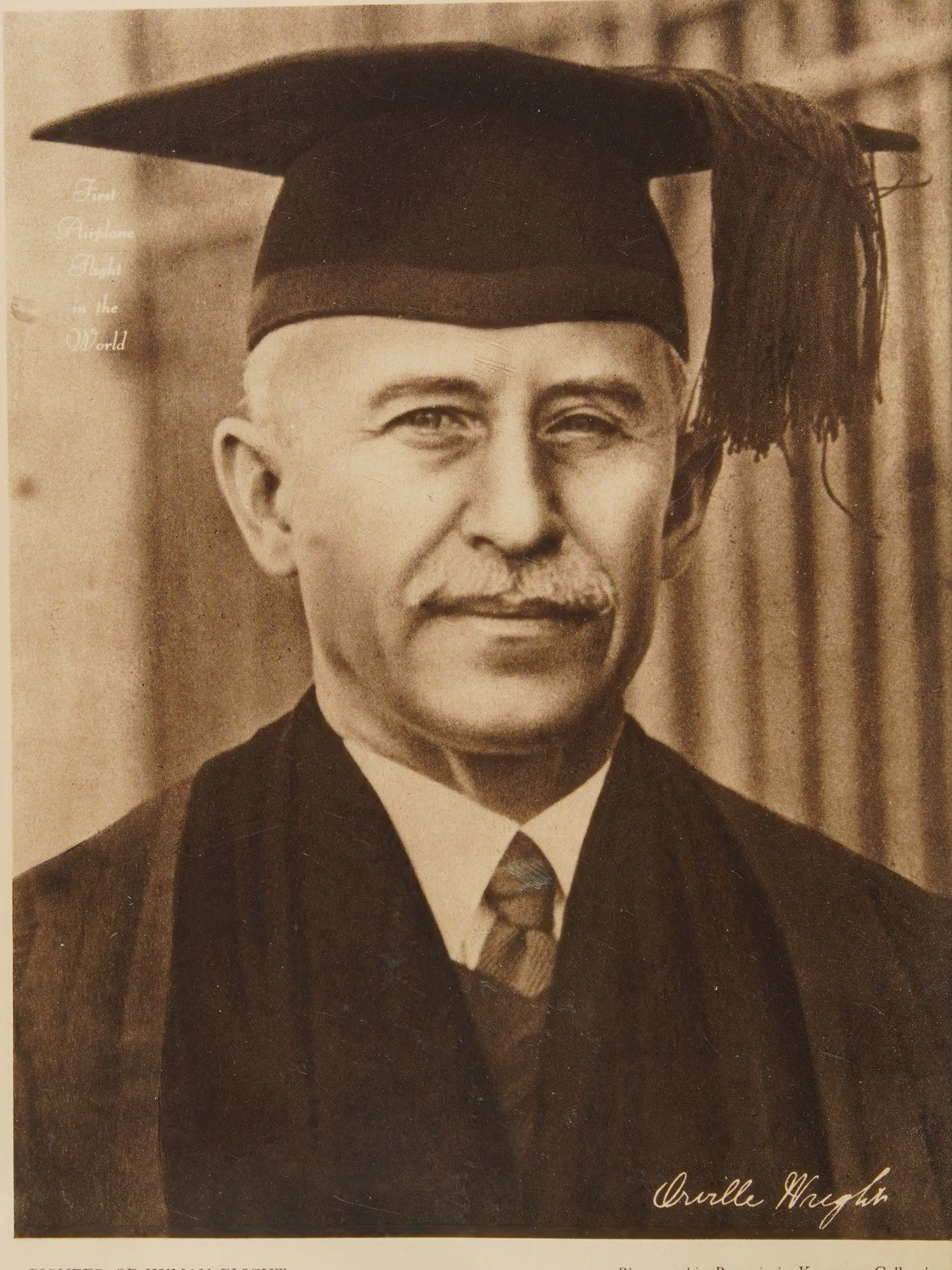
Dedicated
to the
Martyrs
of the
New Age



First
Airplane
Flight
in the
World

Orville Wright

PIONEER OF HUMAN FLIGHT

Photographic Portrait in Keystone Collection

The
WORLD IN THE AIR

The STORY *of* FLYING *in* PICTURES

BY

FRANCIS TREVELYAN MILLER

(LL.D., LITT.D.)

HISTORIAN "PHOTOGRAPHIC HISTORY OF THE CIVIL WAR," "THE WORLD WAR,"
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The STORY of FLYING in PICTURES

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HISTORIAN'S FOREWORD

WORLD EVENTS *in the* MODERN ERA *of the* CONQUEST *of the* AIR *and their* HISTORICAL FOUNDATIONS

THE MODERN ERA in the development of the "World in the Air" is brought to its historical climax in this volume. The records which began 3500 B.C. are herewith completed in the year 1930 A.D. This work forms the foundation for future volumes and future historians.

We have preserved the evidence in its historical sequence as a standard authority for the public and private libraries throughout the world. We show how great epochs are born; how great discoveries are the cumulative results of thousands of years of human struggle; how this New Age in which we live has evolved through the centuries.

Through these pictorial records we are brought to a full understanding of the progressive movement of mankind in its Conquest of the Air. To visualize it, and give it dramatic action, we have utilized the present tense so that the generations to come may re-live the events which pass rapidly before them in the pageantry of these pages.

The International Advisory Board (see Volume I) has performed an invaluable service for posterity. We are indebted to the late Mr. Glenn Curtiss, whose last days were spent in extending assistance to these volumes; to Comte de la Vaulx, who met his death in America while extending his aid; to the Government Officials of the various nations; and to the Aeronautical Associations which have made their records available. We extend personal tribute to Mr. George Palmer Putnam, of New York, and to Mr. Frederick C. Lowrey, of Chicago, whose co-operation has made possible this world-wide research.

This work is dedicated by Mr. Thomas A. Edison to the "Discoverers of the New World in the Air with the Thousands who have Blazed the Paths in the Skies." The First Volume presents the earliest civilizations up through the ages to the American Civil War. The Modern Era is now recorded in the following pages. Contemporary events since the World War are so largely a matter of current news that we have included only the high spots of greatest historical significance. The modern Crusaders of the Air have left their own records of achievement in their autobiographies.

To the hundred thousand and more Airmen throughout the world today, we extend our highest esteem with regrets that the scope of our work does not allow us to include them all in a monumental record that would require a library in itself. We trust that historians with supplementary volumes will grant them full credit. Their loyalty to the Science of Aeronautics is far greater than any personal honors and they will gather about this Memorial to the Pioneers as a sacred shrine dedicated to the most courageous men the world has ever known.

Francis Trevelyan Miller.

First Distance Flight on the Western Continent

Glenn H. Curtiss

PIONEER PILOT-INVENTOR-INDUSTRIAL LEADER

Portrait By Matlock Studio

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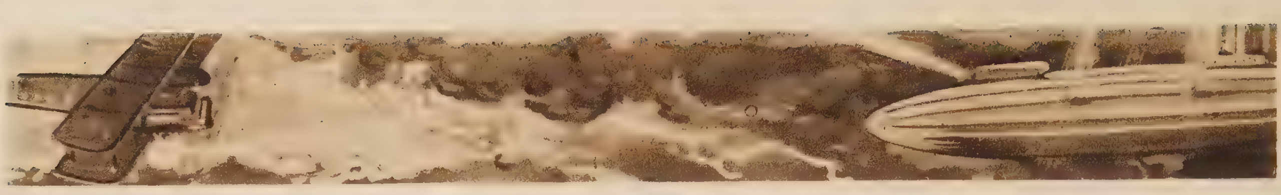

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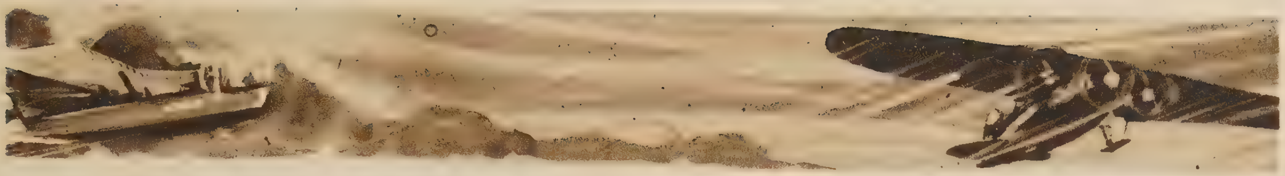

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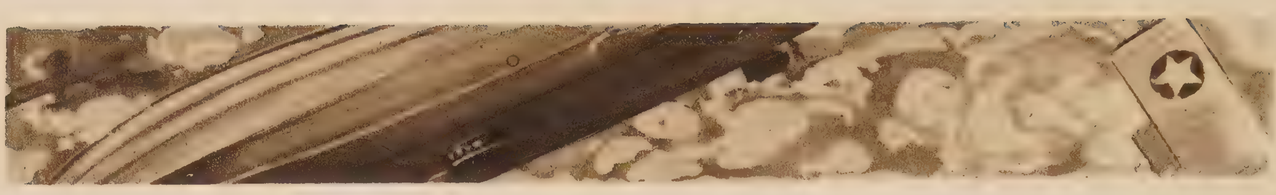

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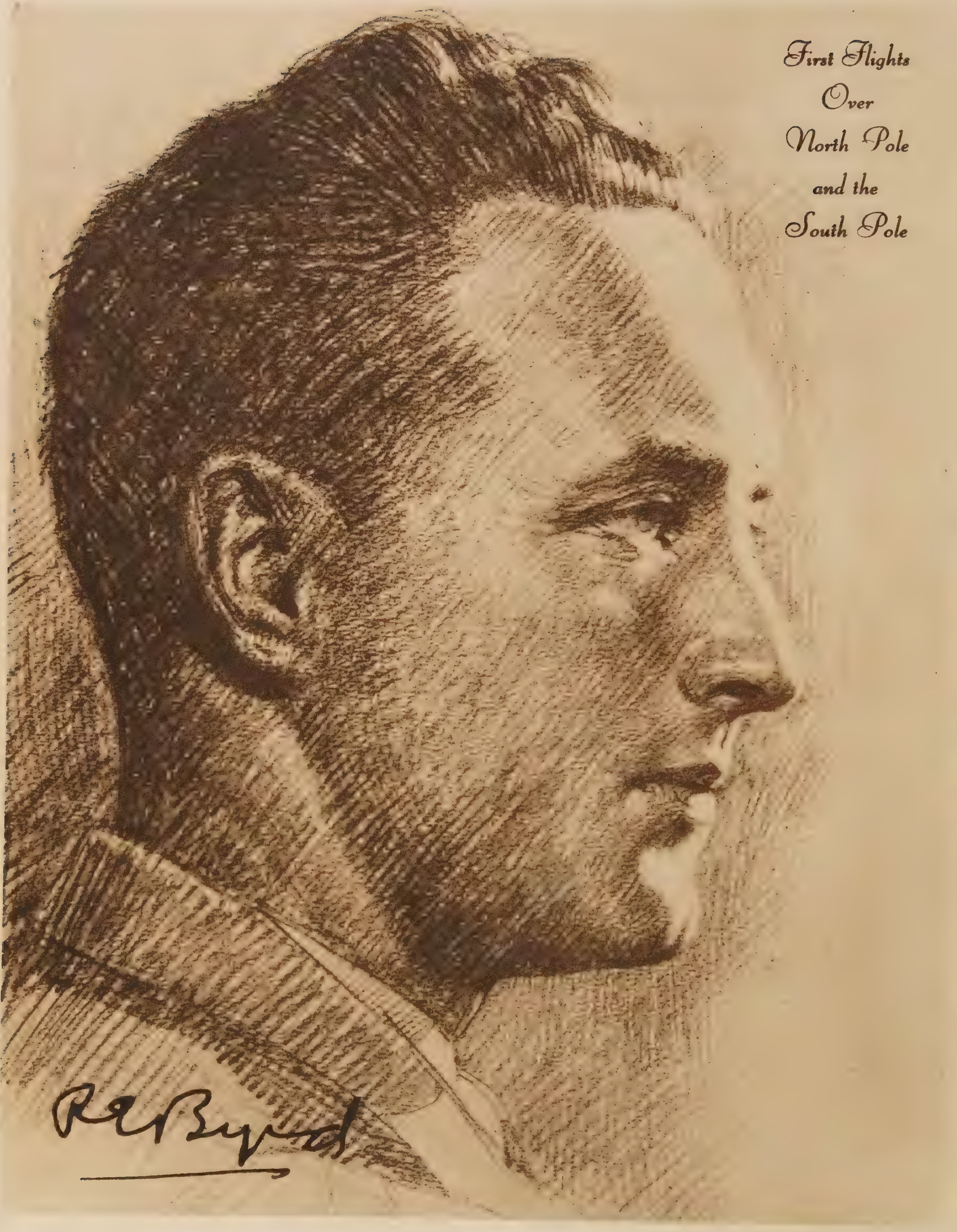

First Flights
Over
North Pole
and the
South Pole
R E Byrd

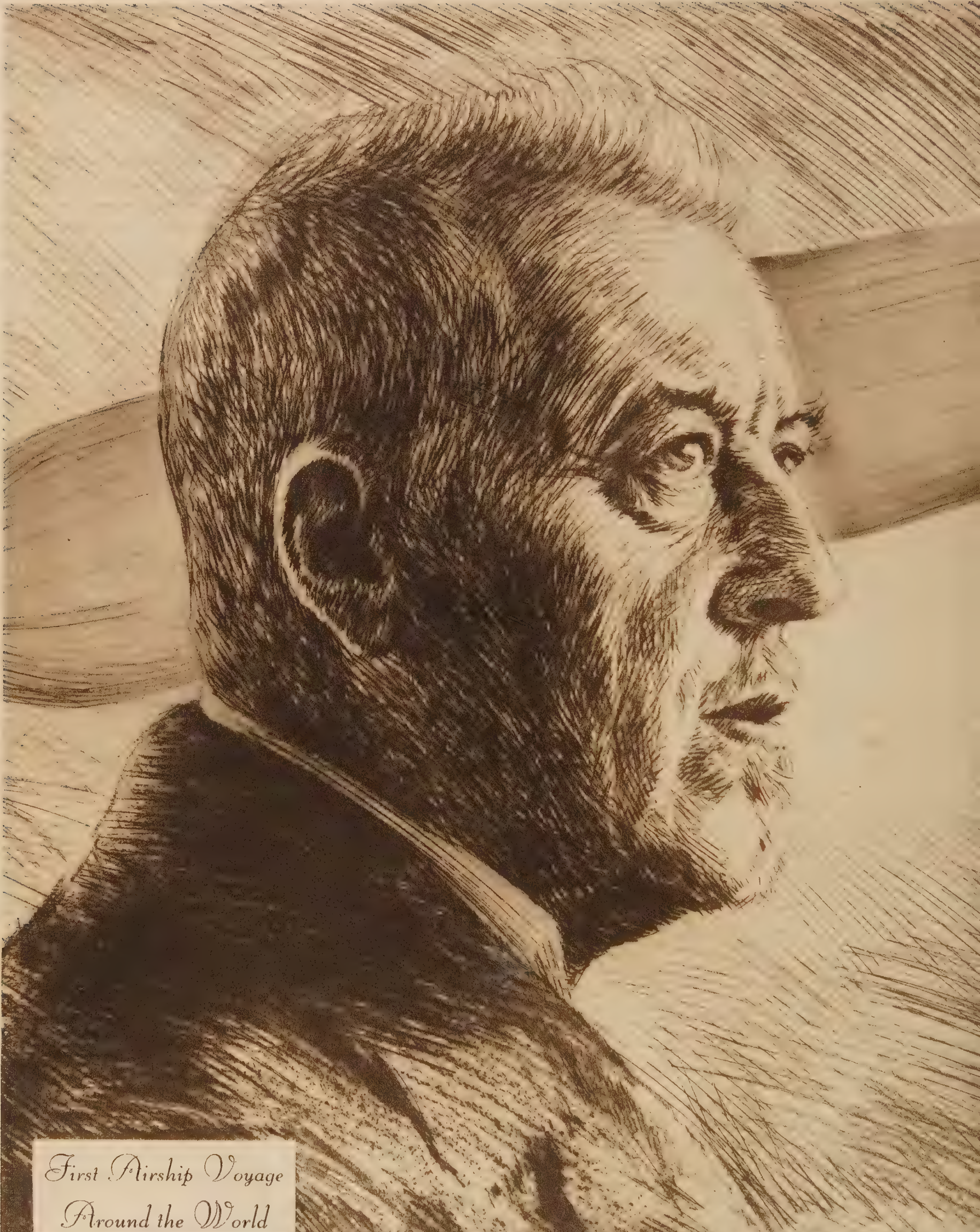
PIONEER OF AERIAL EXPLORATION

Drawing By Rebecca Linden Taylor

First Flight
New York to Paris

Charles A. Lindbergh

PIONEER "AMBASSADOR OF THE SKIES" *Portrait By* G. L. Manuel Freres, Paris


First Airship Voyage
Around the World

PIONEER OF WORLD-WIDE
AERIAL TRANSPORTATION
Etching By Karl Bauer

Hugo Ecken

First Woman
to Fly across
Atlantic Ocean
Earhart

IONEER OF WOMAN'S DOMINION OF THE SKIES

Photographic Portrait By Pinchot

First
to Utilize
Aerial
Observation
in Warfare on
Western
Hemisphere

PART I

FOUNDATIONS *of the* NEW WORLD *in the* AIR

ZEPPELIN *Begins* CAREER *in* RANKS *of* LINCOLN *in* AMERICA

THE GREAT CONQUEST opens this Modern Epoch with world crisis. The foundations of the nations are being re-laid. A maelstrom of political upheavals causes the collapse of unsound economic and social structures and opens an era of reconstruction on sounder scientific principles, out of which this New Age of the Air is to rise.

America engages in the greatest fratricidal war in human history—the American Civil War (1861). The figures of Lincoln, Lee, Grant, Jefferson Davis rise out of this crisis. And in the ranks of Lincoln we find Zeppelin, a young German military observer, as he begins his career which ultimately is to give the Airship to the world.

In France, Napoleon III, who too, had "lived his day" in America, is restoring the Empire, while Ponton d'Amecourt appears with his "Steam-Driven Model Helicopter." In England, the figures of Gladstone and Disraeli are dominating the scene where Bright is experimenting with power-driven helicopters and Coxwell and Glaisher are breaking world records by ascending 37,000 feet into the air (1862).

The Emancipation Proclamation frees 3,120,000 slaves in America; the Battle of Gettysburg is fought; while Zeppelin pursues his aerial observations with the Federal Army; and back in Germany, Bismarck is engaged in the unification of the German Empire. The French set up Maximilian, Austrian Archduke, as Emperor of Mexico, as the "Societe d'Encouragement por la Locomotion Aerienne" is being founded in Paris and Coxwell is advocating the "Military Use of Balloons" in England (1863).

War breaks out between Prussia and Denmark; Grant is made Commander-in-Chief of the Federal Armies in the American Civil War; Sherman marches to the sea; the *Kearsarge* sinks the *Alabama* in naval conflict while all nations continue to develop the science of aeronautics which is to become a decisive factor in wars.

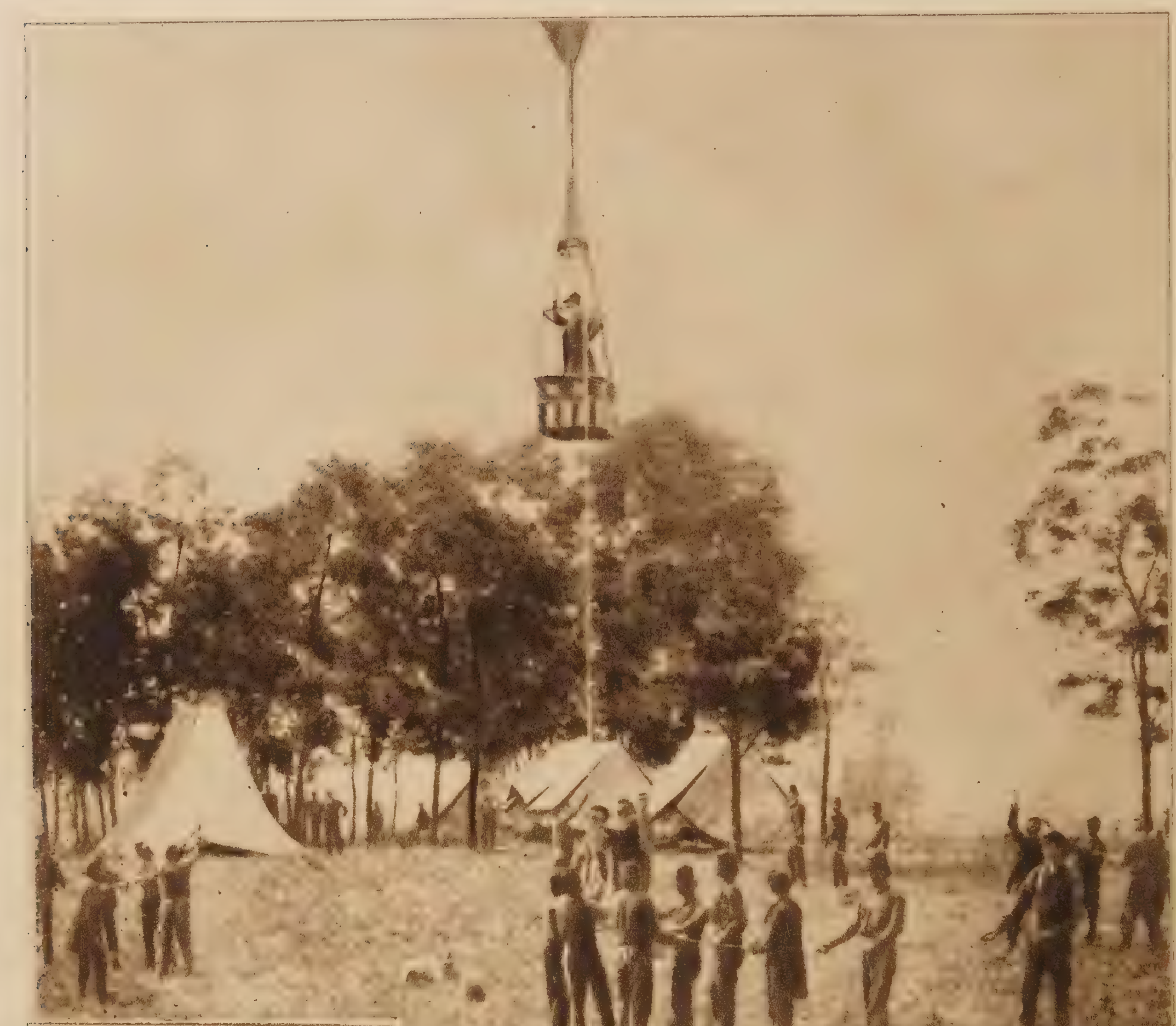
The last shot is fired in the American Civil War; Lee surrenders to Grant at Appomatox; Lincoln is assassinated; Slavery is abolished in the United States by Constitutional Amendment (1865)—all in the year that Haenlein is developing his screw propellers (gas engine) for Aerial Navigation, and the Duke of Argyll is advocating his "Heavier-than-Air" flights. The Aeronautical Society of Great Britain is founded (1866) and Wenham presents his treatises on "Aerial Locomotion."

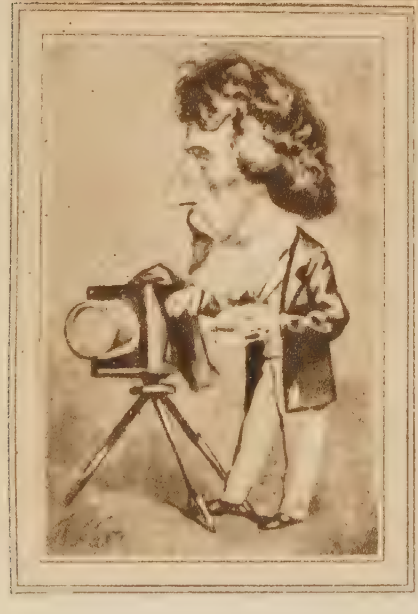
Alaska is purchased from Russia; the Dominion of Canada is established; Maximilian is captured and executed in Mexico; the second Atlantic Cable is laid (1867). The Restoration of the Mikado takes place in Japan; Queen Isabella flees from Spain; while the First Aeronautical Exhibition is held in England; Moy is working on "Flying Machines capable of 150 miles per hour;" and Stringfellow is showing his model "Triplane Flying Machine" (1868).

During this period the first ironclad warship is constructed in America by Ericsson; the machine gun is invented by Gatling; and dynamite is introduced as a high explosive by Nobel in Sweden. The Suez Canal is opened (1869); "Black Friday" sweeps Wall Street in New York.

Events move with kaleidoscopic rapidity. Great personalities come and go, each adding to the sum total of human experience. We shall now witness in these pages the march of man's progress.

FIRST PHOTOGRAPHS *Taken of* AERIAL *Maneuvers*—1862





FIRST AERIAL OBSERVATIONS IN AMERICAN CIVIL WAR
First Official Government Aeronaut—Prof. T. S. C. Lowe (Above)

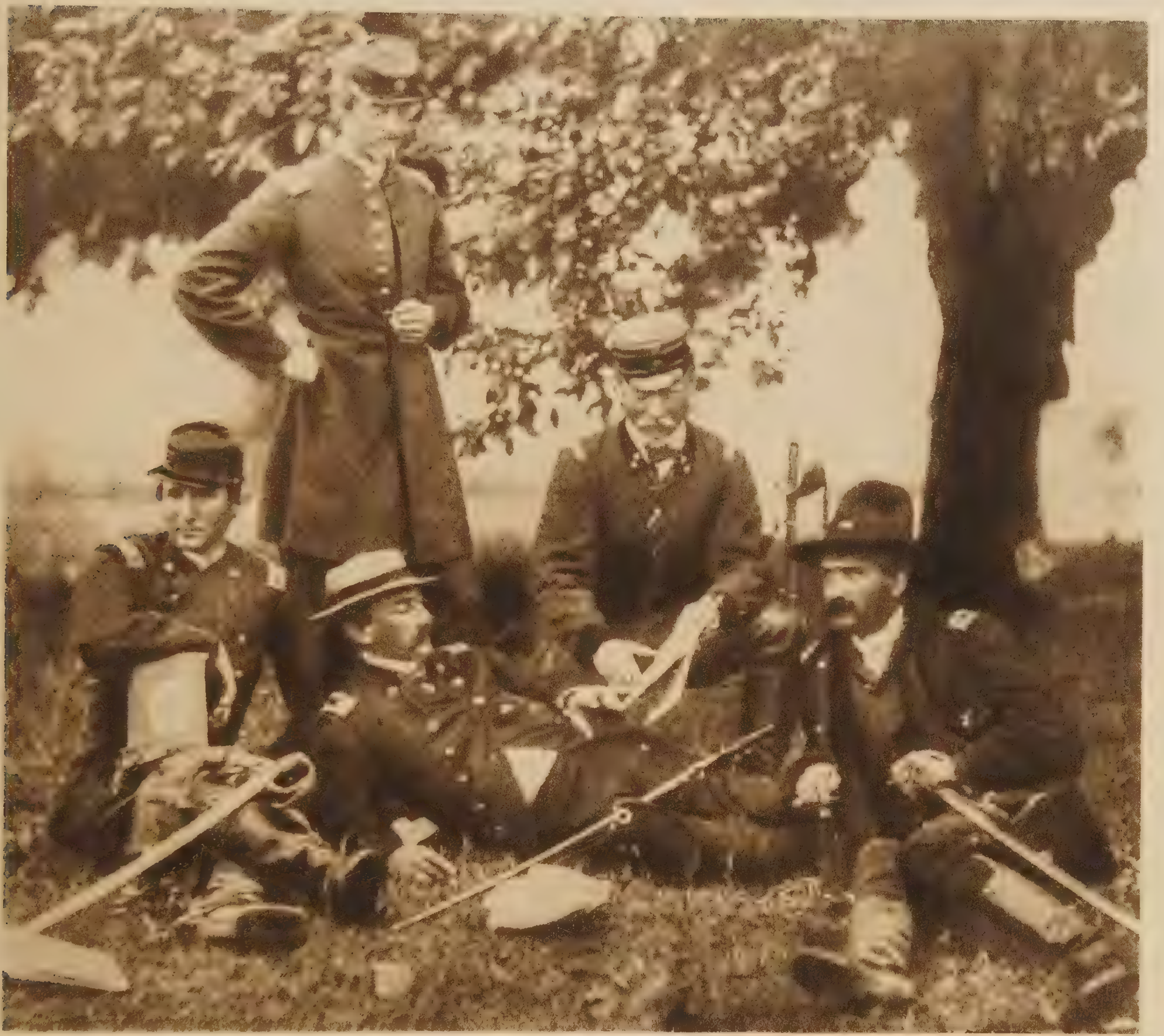
LINCOLN FIRST TO ADOPT SCIENCE OF AERONAUTICS on the Western Continent as an arm of the Government (1861). Napoleon has been the first on the Eastern Continent (1794); Denmark followed (1708)—Russia (1812)—Austria (1849)—United States (1861).

Then comes Great Britain (1862)—Japan (1869)—Germany (1870)—Spain (1884)—Italy (1885)—Belgium (1886)—China (1886)—Holland (1886)—Serbia (1888)—Roumania (1893)—Switzerland (1897)—Sweden (1897)—Morocco (1902)—until all the Powers have fallen into line and we witness "War in the Air" in the World War (1914–18).

We present herewith historical records of the First Aerial Observations in America from the 3,500 rare prints and negatives in the Famous Brady-Gardner Collection owned by Edward Bailey Eaton in Hartford, Connecticut the oldest and most valuable photographic treasures in the world.

This great Brady Collection is preserved by Dr. Francis Trevelyan Miller, historian of "The World in the Air" in the monumental ten-volume "Photographic History of the Civil War" (Copyright by Review of Reviews). Sketch (left) is Nast's famous cartoon of Mathew Brady, the world's first photographer of historic events.

ZEPPELIN *Starts* GREAT CAREER *in Ranks of* LINCOLN—1862



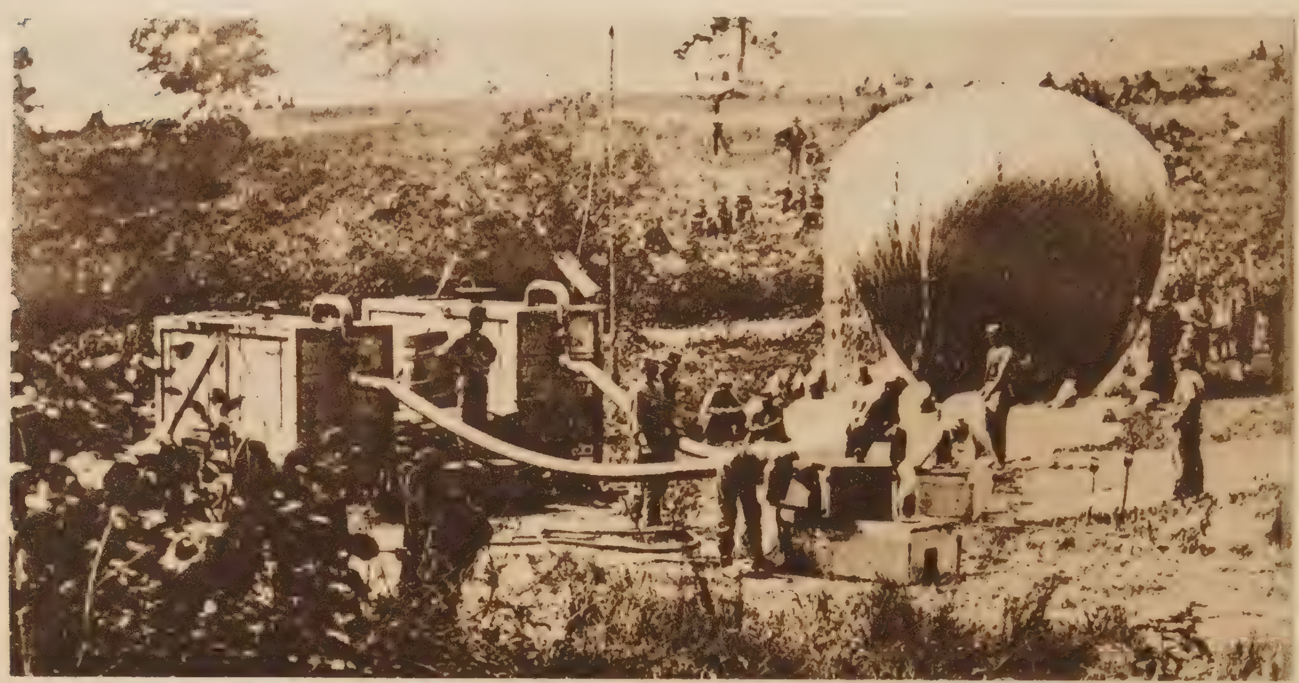
FIRST PHOTOGRAPH OF COUNT ZEPPELIN IN AMERICA

Seated (center) with Military Documents in his hand

WE HERE FIRST MEET ZEPPELIN—The career of the great German, who gave the modern Airship to the world, started in America in the ranks of Lincoln (1862). We find him at the age of 24 years as an official observer of the Prussian Army in the American Civil War.

This is where Zeppelin got his first idea of Aerial Navigation when he witnessed for the first time in the world's history the direction of artillery fire from the military balloons of Professor Lowe, America's first chief of Aeronautics.

Zeppelin made his first balloon ascent in America. This directed the course of his life achievement. After the assassination of Lincoln, whom he greatly admired, we find him in the Austrian War (1866); Franco-Prussian War (1870); retiring with rank of General (1891) and building the World's First Dirigible Airship (1900) with his great Zeppelins in the World War (1914-18). Photograph (right) shows First Chief of U. S. Secret Service—Robert Pinkerton—on his horse. Original Photographs taken by Brady and Gardner under Pinkerton's direction. Copyright Review of Reviews.



OFFICIAL NEGATIVE OF UNITED STATES GOVERNMENT'S FIRST MILITARY BALLOON
Photograph Entered According to Act of Congress (1862) By Mathew B. Brady

AMERICA'S FIRST AERIAL MILITARY OBSERVER—Professor T. S. C. Lowe telegraphed President Lincoln after the firing on Fort Sumter (1861) and hurrying to Washington offered the services of his Exhibition Balloon for military observation in surveying the enemies' lines.

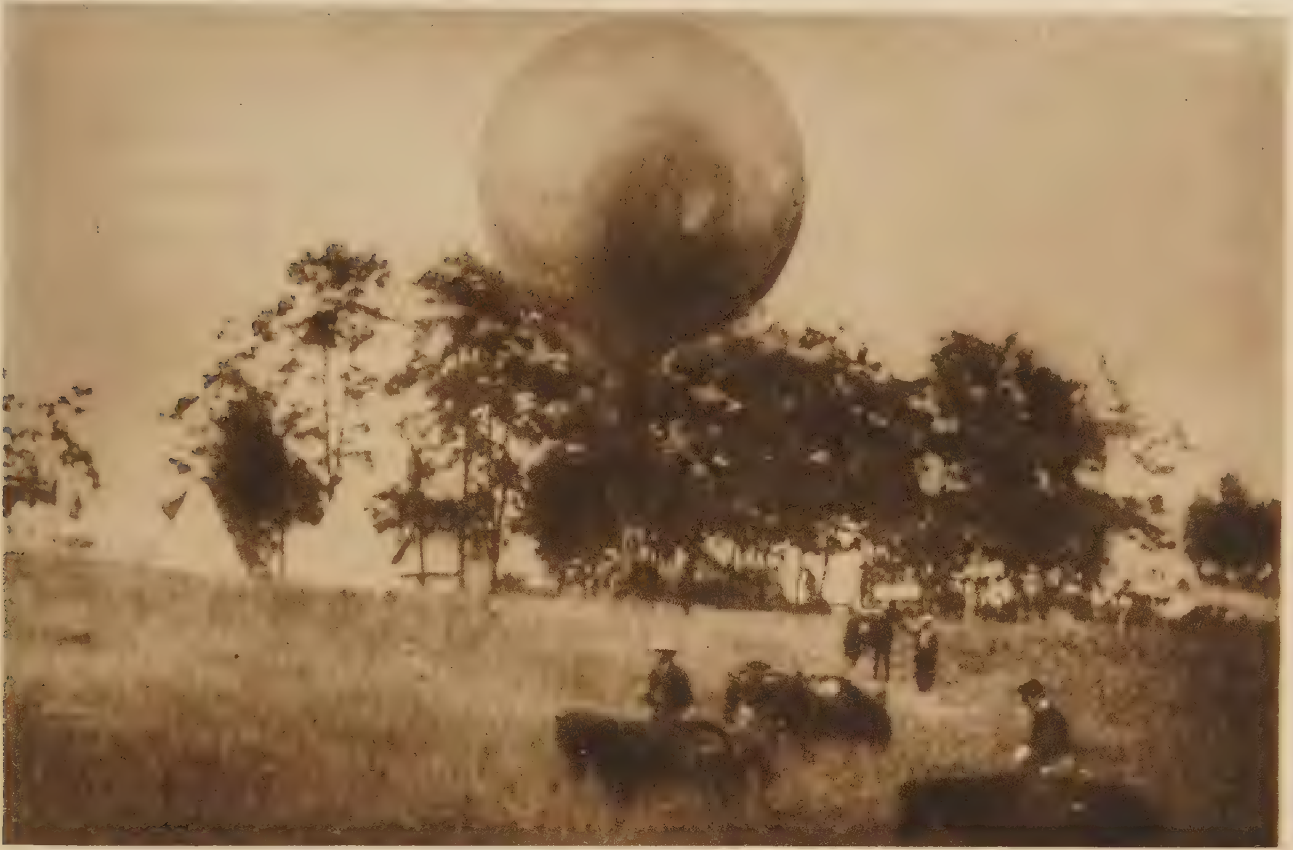
President Lincoln and Secretary of War Stanton accepted and we find Lowe over the battle-lines near Manassas in the first attempt at heliography from the air. He discovered the position of the victorious Confederates and issued the first military aerial report.

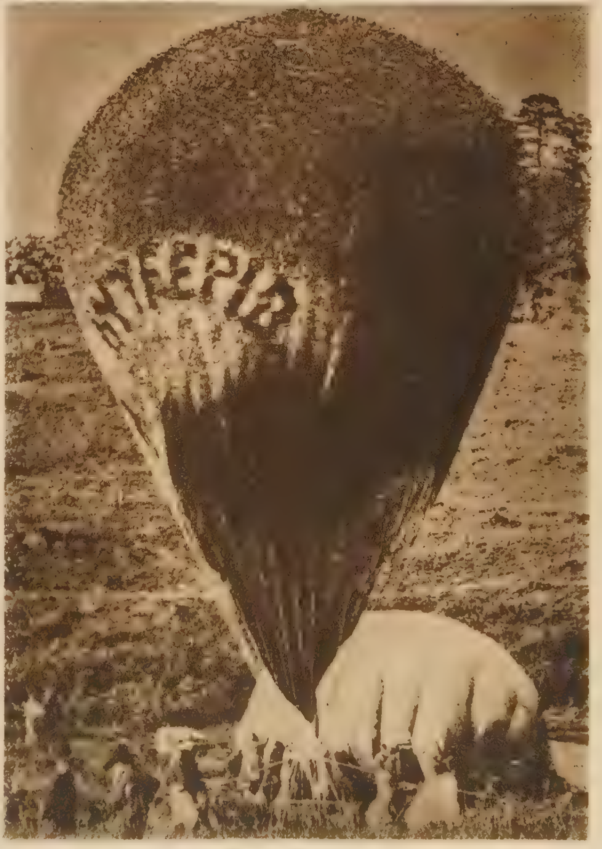
We then find Lowe with General McClellan's Army making ascents and descents under heavy artillery fire in various engagements. He reported (May 4, 1862) that Confederate General Magruder had left his position during the night. The first artillery fire ever directed from a balloon was by General Stoneman (May 24, 1862).

Again we find Lowe in the air "looking into the windows of Richmond" (May 31—June 1, 1862), telegraphing, reporting and mapping the position of the Confederate Army and delivering the information on which General McClellan saved his Federal Army. This photograph in the Brady Collection shows Professor Lowe standing by his father in camp before the Battle of Fair Oaks (1862).

At the outbreak of the Civil War, Lowe was making trial flights with "*The Great Western,*" the "World's Biggest Balloon," (originally "*The City of New York*") with which he intended to fly across the Atlantic Ocean.

CRITICAL MOMENT *Over* BATTLEFIELD *of Fair Oaks*—1862





AERIAL CONTROVERSY IN LINCOLN CABINET—Lincoln and the Smithsonian Institution were strong adherents of the coming "Aerial Age." General McClellan stood back of Lowe. General Grant, and General Lee of the Confederacy, were master strategists of battle-lines and the air was too far in the future for their immediate actions.

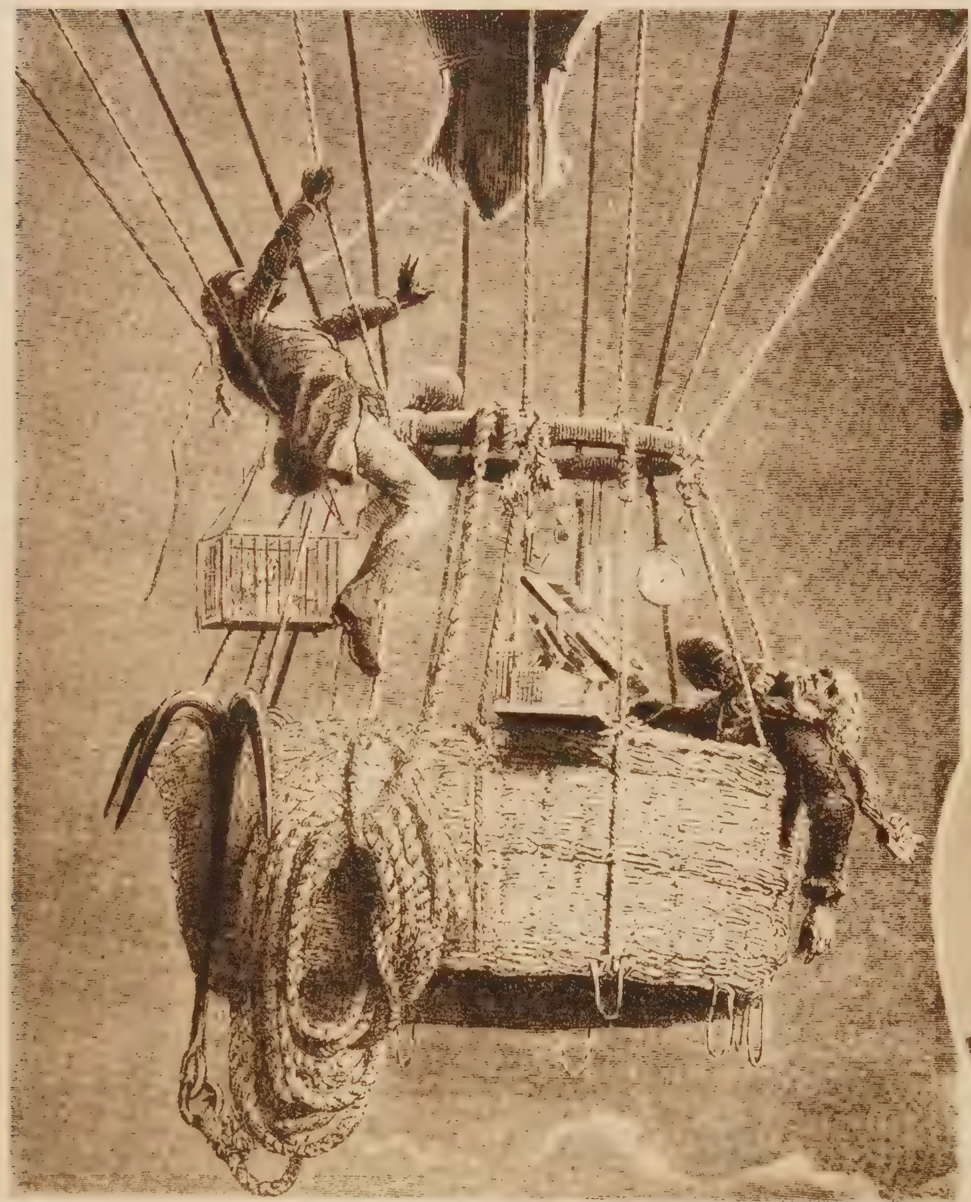
Secretary of War Stanton believed its usefulness "too remote." But Lowe continued his aerial scouting at the gates of Richmond. He made strategical discoveries at Chickahominy and at Fair Oaks (1862). An observation balloon was attached to a locomotive and moved from place to place. The Balloon Signal Service was first to discover the fleet under Wilkes in the James River.

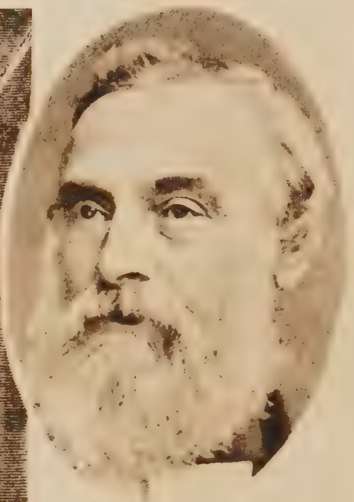
THE FIRST WAR AIRSHIP was offered to the Government by Dr. Solomon Andrews, of Perth Amboy, New Jersey (August 1862). Secretary Stanton could not see that it would be of any "practical utility." Dr. Andrews replied: "I intend to build one immediately on my own account and if successful I shall present it to the United States Government in the hope that it may shorten the war."

After a personal interview with Lincoln, Andrews addressed a petition to Congress calling attention to his "model which is now in the basement of the Capitol for examination." As a result of this complaint to Congress, Secretary Stanton appointed a Commission to examine the invention. The Commission reported favorably (July 22, 1864) but the war was over before "red tape and opposition" allowed Dr. Andrews to construct the world's first war airship.

Photographs of the Lowe Balloons on this page from the Brady Collection. (Copyright by Review of Reviews). Photograph of Andrews Airship "Aereon" (page 25).

ENGLISHMEN ASCEND 37,000 *Feet into the* CLOUDS—1862





HENRY COXWELL
Went Up Seven Miles
(September 5, 1862)

JAMES GLAISHER, F.R.S.
"Nestor of Meteorologists"

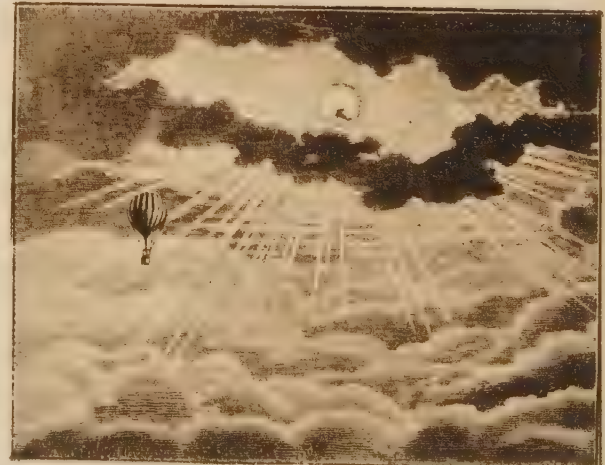
GLAISHER AND COXWELL BREAK WORLD RECORD

JAMES GLAISHER was chief meteorologist at Greenwich Observatory. He organized the science of meteorology as we know it today. Henry Coxwell was a dentist who became a professional aeronaut.

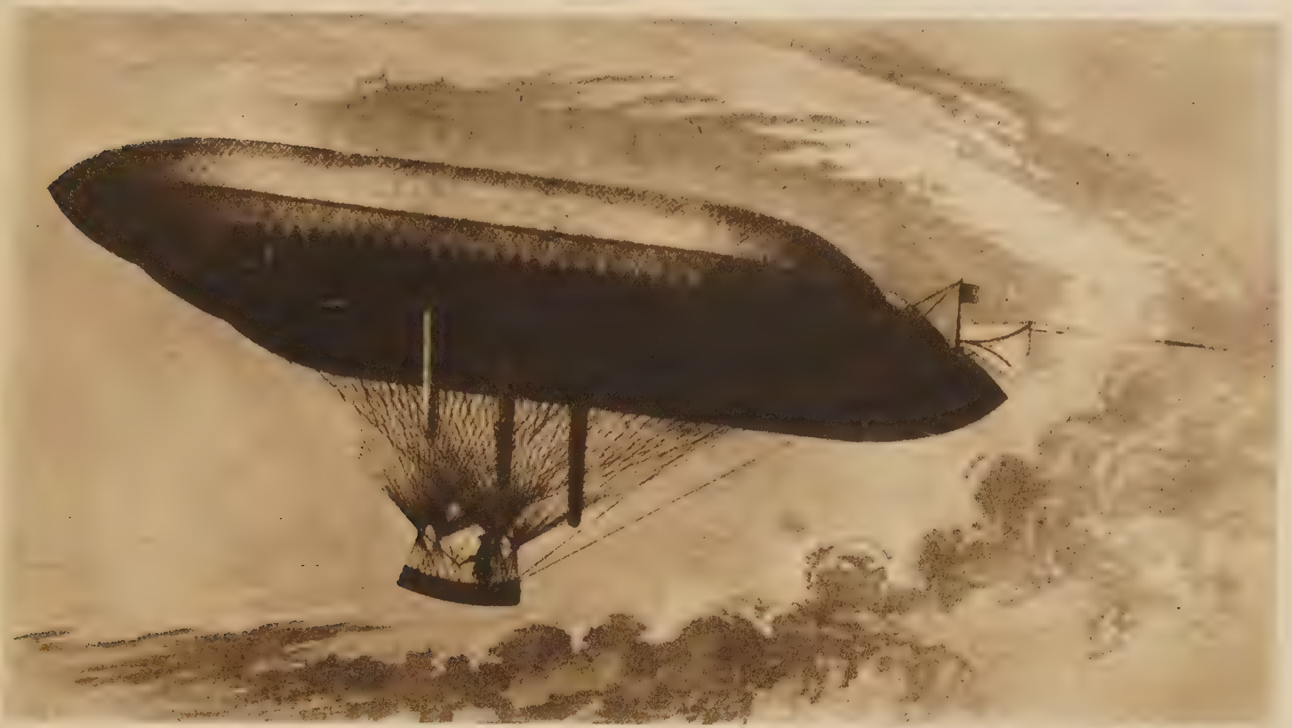
They took "The Mammoth Balloon" from Wolverhampton, England, *more than seven miles straight up into the heavens (September 5, 1862) and came down alive.* They reached the astounding altitude of 37,000 feet above the earth (estimated). When 29,000 feet up (five and a half miles) both became insensible.

Coxwell was in the balloon ring adjusting the gas valve line when Glaisher passed out. Barely able to drop back into the balloon car, he too, became senseless. Unable to use his hands, he jerked open the valve with his teeth.

This was one of a series of scientific ascents (1862-1866), undertaken on behalf of the British Association for the Advancement of Science, in which Glaisher was prominent



DIRIGIBLE *with* ENGINE-POWER *to Fly* ATLANTIC—1863

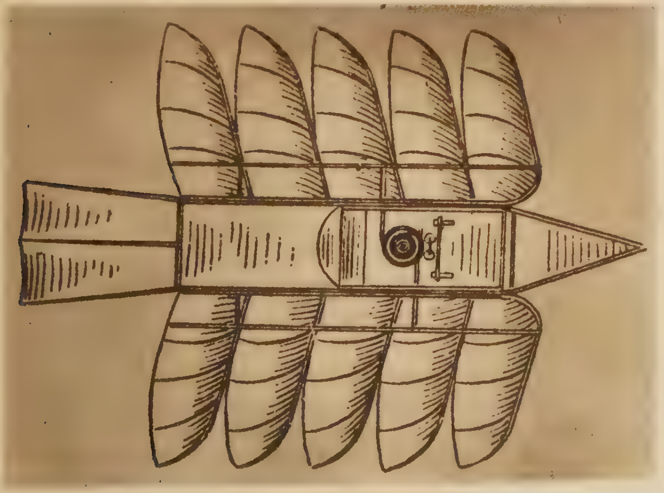


ANDREWS' AIRSHIP PROPOSES TO CROSS THE OCEAN DURING THE CIVIL WAR
Old print in archives in the Library of Congress in Washington.

DURING the Civil War (1863) when the battle of Gettysburg was commanding the attention of the world, an inventor named Andrews of South Amboy, New Jersey, designed the peculiar appearing craft which "Flew over New York," according to his claims. Whether this flight was made during the night or early dawn is not recorded as Andrews kept his ship and tests a secret, probably because he hoped to close a contract with the Government for Military purposes.

This airship consisted of three cigar-shaped balloons fastened together, with a boat-shaped car fastened beneath by many lines. It was undoubtedly intended for military observation with the Union Army, then fighting in Virginia but it is doubtful if he ever got his craft in shape to make a definite proposal at Washington. He had ambitious plans for the airship, probably built it, in fact, with the idea of flying the Atlantic, a project which was much in the popular mind in those days.

What sort of engine the aeronaut could have had in this dirigible is unknown. No steam engine had been built in the 60s to deliver power sufficient to operate an airship. It appears that Andrews made many flights over the country in the immediate vicinity of the Amboys. There is even some record of his having dared a flight which took him over Staten Island and the upper bay, reaching the southern end of Manhattan Island.

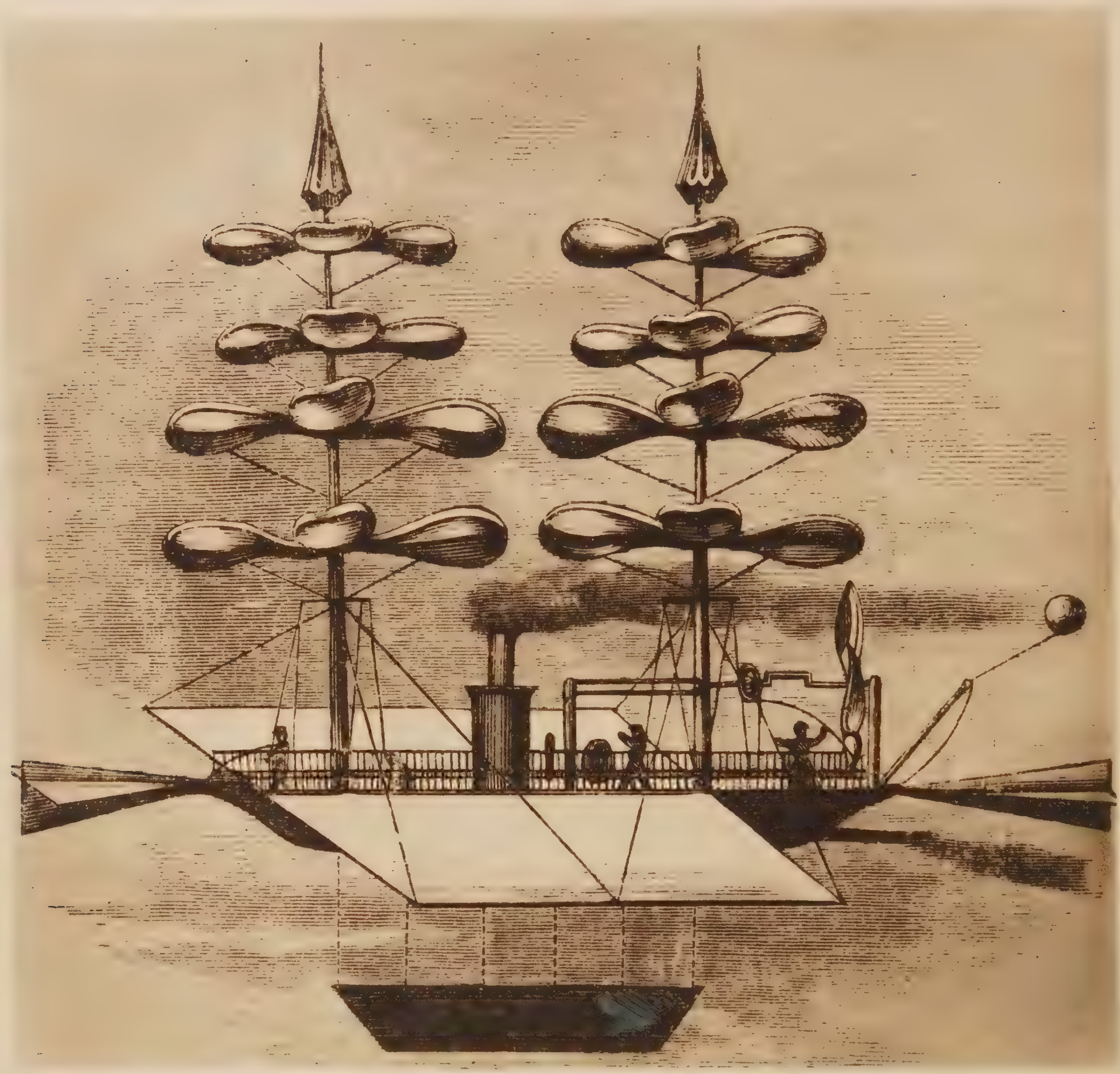


RUSSIA PROPOSES GREAT "FLYING MACHINE"
Designed (left) by Struve and Telescheff

This huge flying machine, with five pairs of wings was built by two Russian Engineers (1864), Struve and Telescheff. It created wide controversy throughout Europe, where every nation was competing to solve the problem of aerodynamics. It was constantly repeated that "the nation that conquered the air will rule the world." Scientists were working secretly to develop the principles which would give their nation world supremacy.

Struve and Telescheff's five pairs of wings were attached to a central plane and were operated by some sort of spring motor, which was expected to be driven by power. At least, one gathers this from the only description of this machine available. But probably its designers were looking for a light engine—and the fact that their machine was never tested indicates that they did not find one.

STEAM-*Driven Aerial* LOCOMOTION—*Landelle Plan*—1863



GABRIEL DE LA LANDELLE (1812-1886) originated the word "Aviation." He startled the world with a sensational design (above) for a "Steam Air Liner" (1863). Landelle's proposed airship utilized the air screw idea, the basic principle of the helicopter. It had large planes on either side of its boat-shaped hull and two masts with four huge revolving air screws on each. Atop both masts were huge umbrella parachutes which were to be carried folded except in time of need.

This steam flying machine was an outgrowth of the efforts of Landelle and his two friends, the Vicomte de Ponton d'Amecourt and Felix Tournachon (better known as "Nadar"), to solve the problem of heavier-than-air navigation. It carried further the experimental steam-driven helicopter of Ponton d'Amecourt exhibited in the London Aeronautical Exposition (1868), and now in the Aeronautical Museum of the French Air Service at Chalais-Meudon, Paris. D'Amecourt's model was highly developed from a mechanical standpoint, with boiler and frames of aluminum and steam cylinders of bronze..

Landelle, Ponton d'Amecourt and Nadar organized the "Societe d'Auto-locomotion Aerienne" (1862) and set out to establish aerial navigation on a scientific basis. Two years afterward this became the "Societe d'Aviation" —first in the world to use this name "Aviation."

We find Landelle assisting Nadar in the construction of the latter's enormous balloon, "Le Geant" (see opposite page), which was originally conceived as a means of raising funds to carry on the work of the three associates. Old print (above) in the Bibliotheque Nationale.

NADAR'S CAR *Rises Over* PARIS *in Epochal* FLIGHT—1863

Felix Nadar (Tournachon), Paris photographer and associate of d'Amecourt and Landelle, built the "Giant" (Le Geant) to raise funds for their Societe d'Aviation (1863).

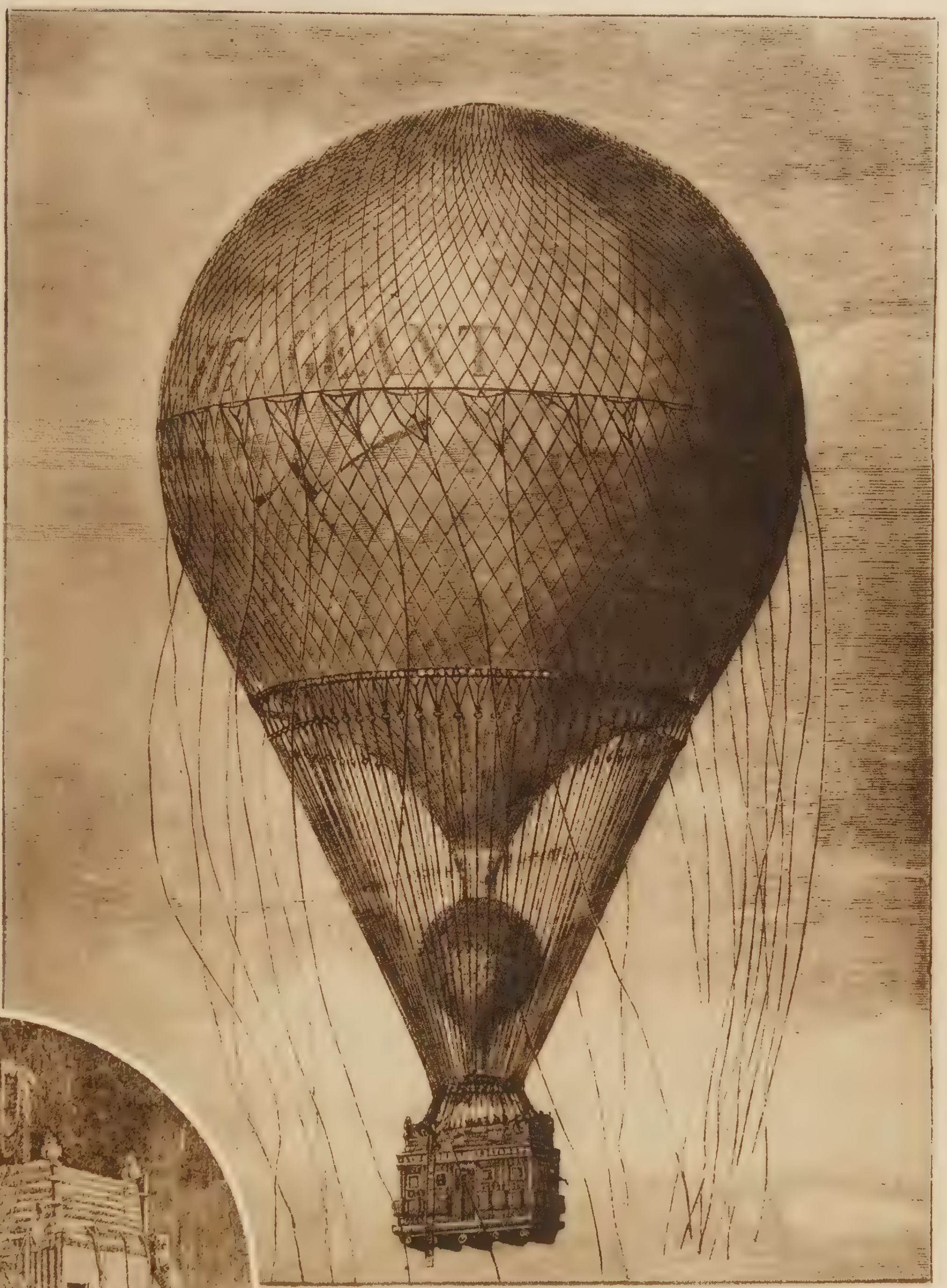
The balloon and car stood 196 feet high. The great bag was 100 feet in diameter. It had two complete gas envelopes, one inside the other, and a smaller balloon beneath called "the compensator."

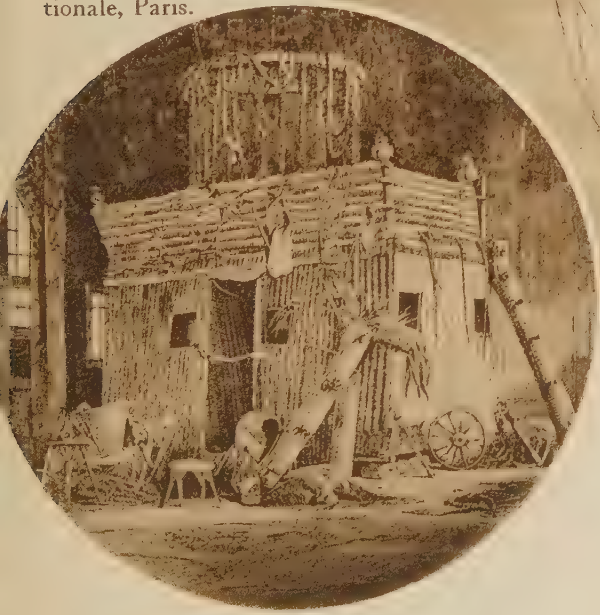
Fully inflated, the lift was 9,000 pounds.

"Le Geant's" huge car was a two-story dwelling, with living and sleeping quarters, captain's cabin, photographic room, lavatory, and a broad roof with an observation gallery.

This overwhelming Aerial Ship was a sensation in French and German cities. Nadar wrote books about his experiences. George Sand wrote a preface for one book, Leon Daudet for another.

Engravings of "Le Geant" (right) and its aerial home (below) in Bibliotheque Nationale, Paris.



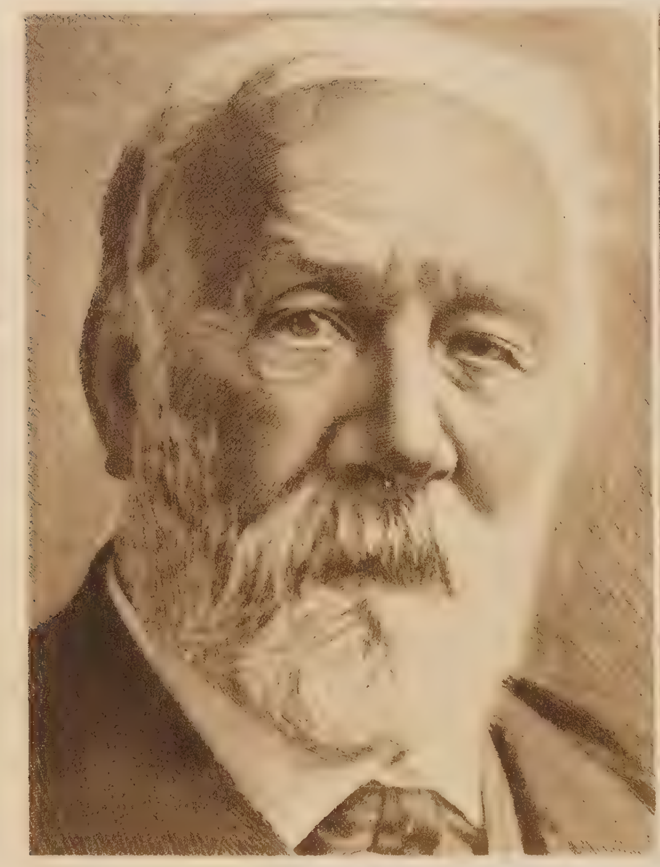


NAPOLEON III witnessed the first ascent of Nadar's mammoth Airship from the Champ de Mars, Paris (October 5, 1863).

Fifteen passengers beside "Captain" Nadar were in the great car—including Princess de la Tour d'Auvergne, Prince de Sayn-Wittgenstein, Count de St. Martin and Louis and Jules Godard. Stores were aboard for a long aerial voyage, but they came down after four hours. In one ascent 32 passengers were aloft.

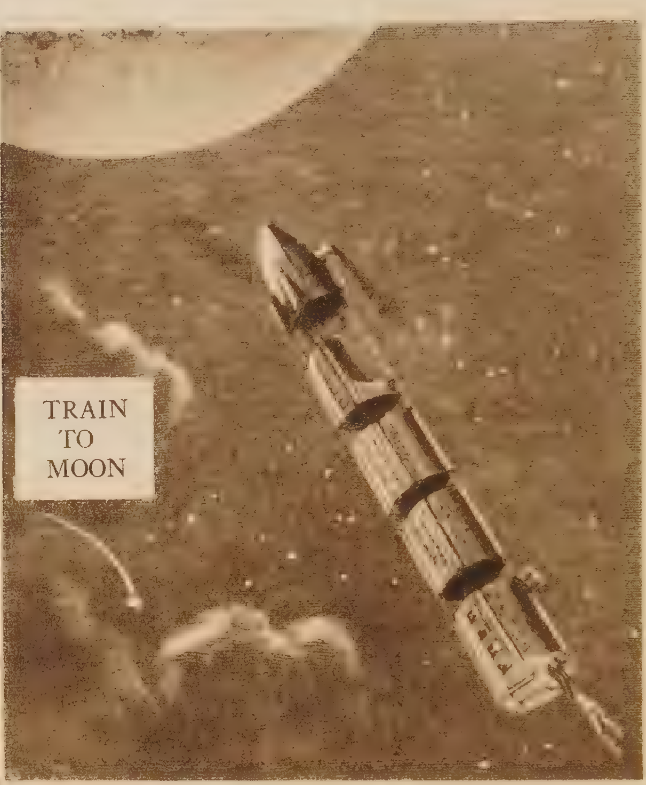
Nadar had both legs broken in a violent descent in Hanover, Germany. We shall meet him again organizing the Paris balloon post during the Franco-Prussian War (1870).

VERNE *Describes Marvelous* "PROJECTILE *to* MOON"—1865



JULES VERNE (1828-1905), the great French novelist, in his prophetic vision laid his plots in science, mechanics and transportation, which to an amazing degree have "come true."

His first great success was "*Five Weeks in a Balloon,*" originally published in a Paris magazine (1862) and then in book form. The aerial voyagers travel the airways to Africa, the East Indies and the Orient.



Verne's greatest success was "*From the Earth to the Moon*" (1865), in which a great projectile train speeds through the ether with its human freight in comfort.

The aerial tourists came back to earth, thrilled and excited over the strange sights they had seen. The Projectile Train is shown here on its journey (above)

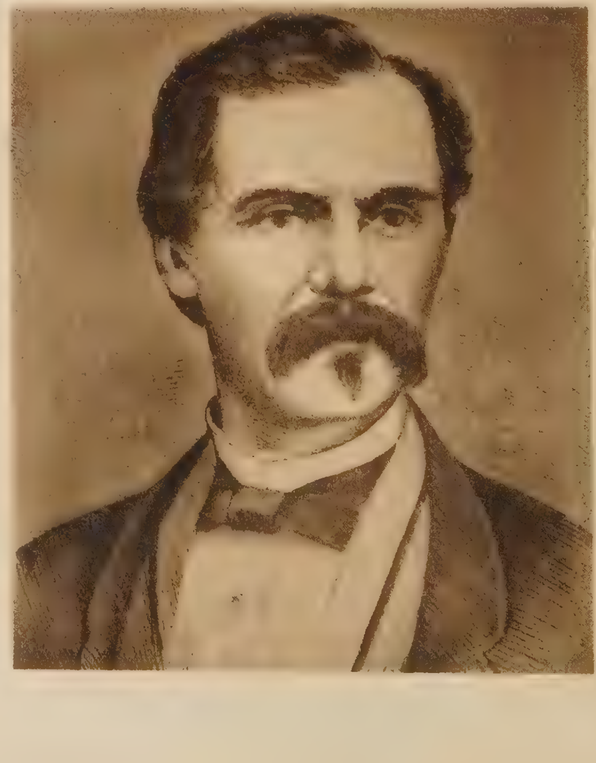
"AMERICA TO EUROPE BY AIR"

Prof. T. S. C. Lowe (right) Plans to Fly Across Atlantic

Professor Lowe had come directly to New York at the close of the Civil War, where he had been in charge of aerial observations in the Federal Army. He was born in Jefferson, New Hampshire, not far from Mt. Washington. He had made his first balloon ascent in 1853, finally making ballooning his vocation even before his signal service to the nation in the war, as told in preceding pages. He became a familiar figure with his heavy black moustache and goatee (see portrait at the right).

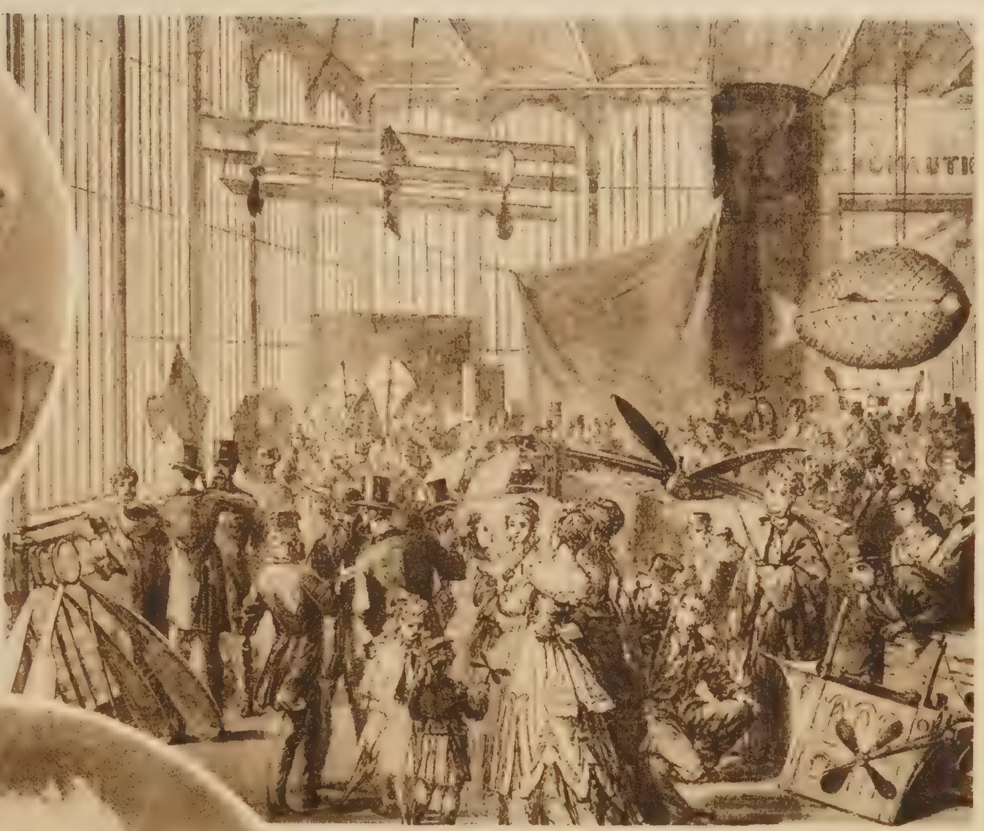
He built the largest gas balloon ever constructed, named "City of New York," and planned to cross the Atlantic in it, but the balloon was destroyed during inflation. This huge balloon was 200 feet high over all, inflated, and 130 feet in diameter, held 725,000 feet of gas, carried a dozen passengers in its great car, beneath which swung a large whaleboat for the Atlantic crossing. The party which was to go included a Congressman from New Hampshire and a New York editor.

Professor Lowe became a famous scientist and astronomer, spending his later years at the head of the Lowe Observatory in California.



"AERIAL LOCOMOTION" *Declared Established* FACT—1866

FREDERICK W.
BREAREY
(1816-1896)
"Father of the British
Aeronautical Society"

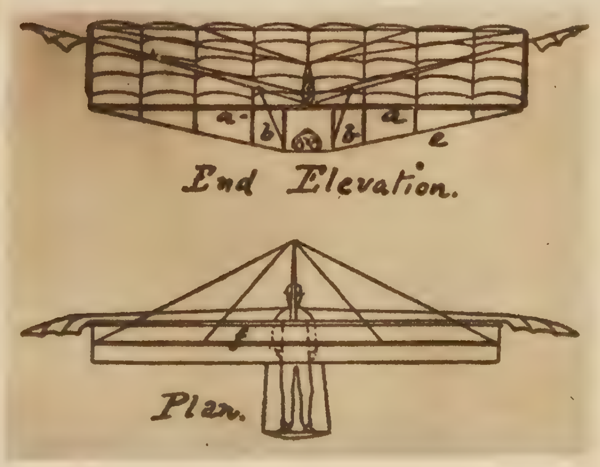


WORLD'S FIRST AERONAUTICAL EXHIBITION
At Crystal Palace in London (June, 1868)

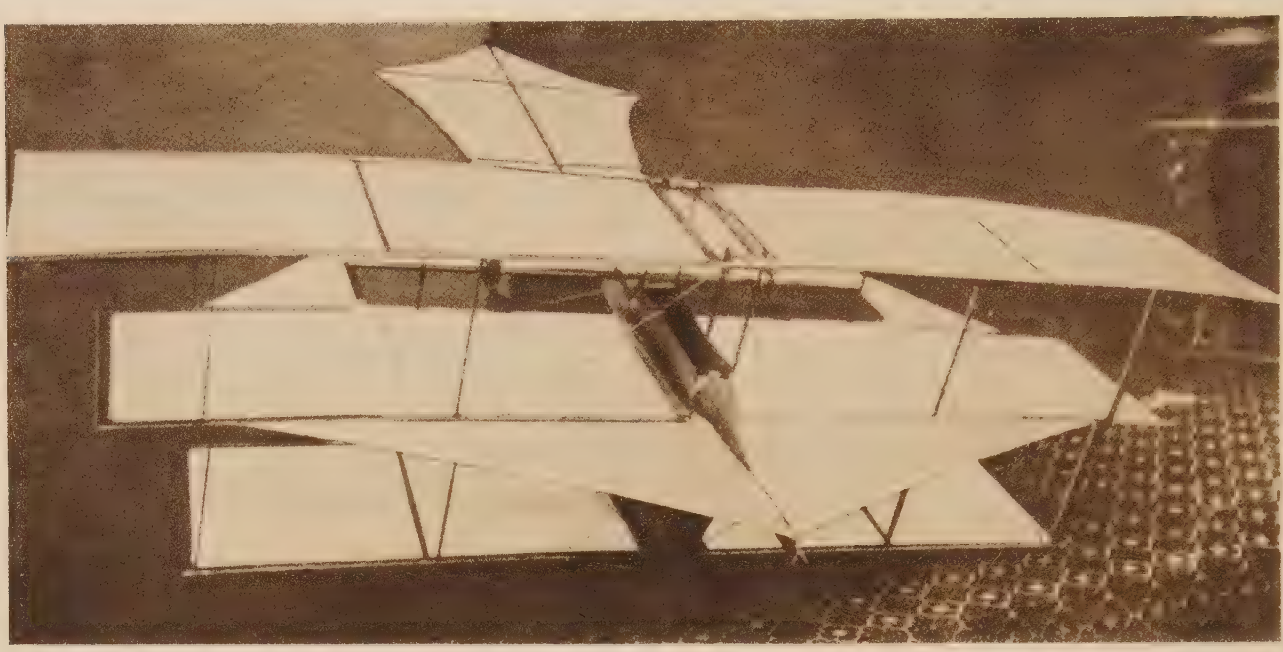
FRANCIS HERBERT WENHAM (1824-1908), English engineer of note (left), is "Father of the Biplane." He took out in England the "World's First Patent on a Flying Device" with superposed planes (1866).

Wenham read before the Royal Aeronautical Society, of which he was a charter member, his paper on "*Aerial Locomotion and the Laws by which Heavy Bodies Impelled through Air are Sustained*," since regarded as a classic (1866).

Wenham built the first English light gas-engine for air experiment. Sketch (below) of Wenham's biplane in the British Patent Office.



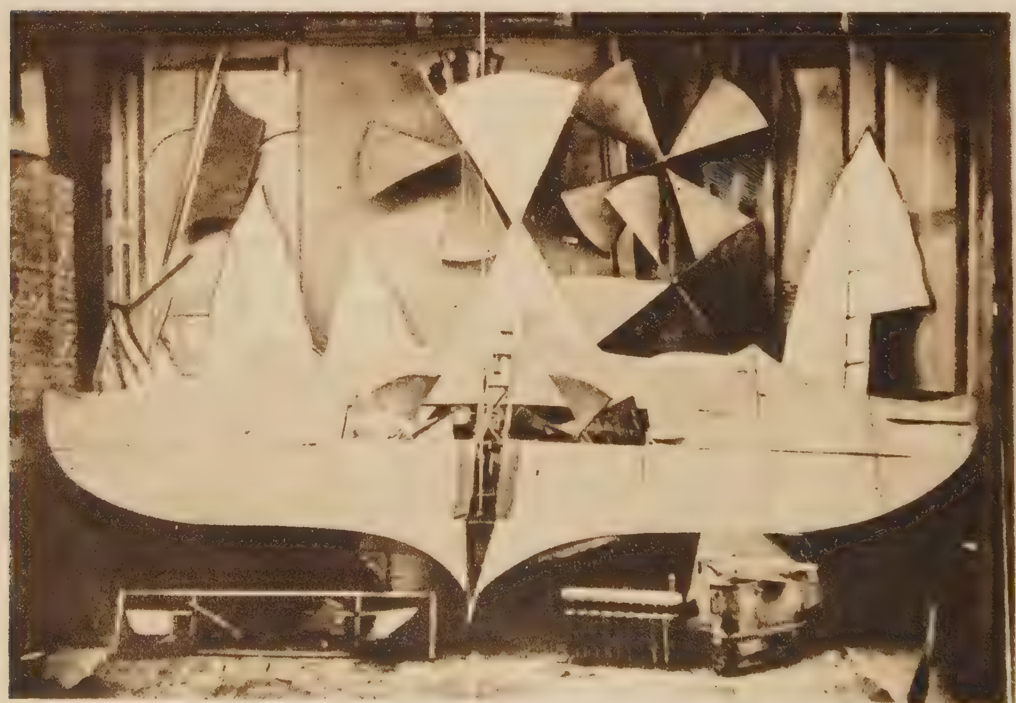
STRINGFELLOW *Establishes* PRINCIPLES *of* FLIGHT—1868



JOHN STRINGFELLOW, English engineer, whom we met with his engine-driven model airplane (1848), again appears. He was out of aeronautics for nearly twenty years, but now comes back into the science after hearing Francis H. Wenham's great paper on "Aerial Locomotion" before the Royal Aeronautical Society (1866). Stringfellow, a member of the British institution, was greatly impressed with Wenham's principle of superposed planes.

Stringfellow built a triplane model around his light steam-engine. He entered this engine and two model planes in the First Aeronautical Exhibition of the Society (1868). He won a prize for the engine (£100) and devoted this to building a laboratory for further experiments. Sixty-nine years of age, his eyesight failing, he gave the remaining fifteen years of his life to the development of aeronautics.

During the exhibition in the Crystal Palace, London, his triplane ran along a wire and its twin propellers, at high speed, occasionally lifted it from the wire. Its superposed planes actually sustained it in the air. The triplane model was tested in the basement of Crystal Palace, with a canvas to break its fall, and satisfied the observers that it would fly if it had sufficient space. This engine, owned by the Smithsonian Institution at Washington, and a Stringfellow triplane built around it (above) is in the National Museum.



MONOPLANE
MODELS
of
JOHN STRINGFELLOW

This Brilliant
British Engineer
Built and Flew
The First Engine-
Driven Airplane
(1848)
Twenty Years Later
He Built the First
Triplane Model
of the Airplane (1868)

Models and Odd Parts
(left)
Preserved in the
British Museum

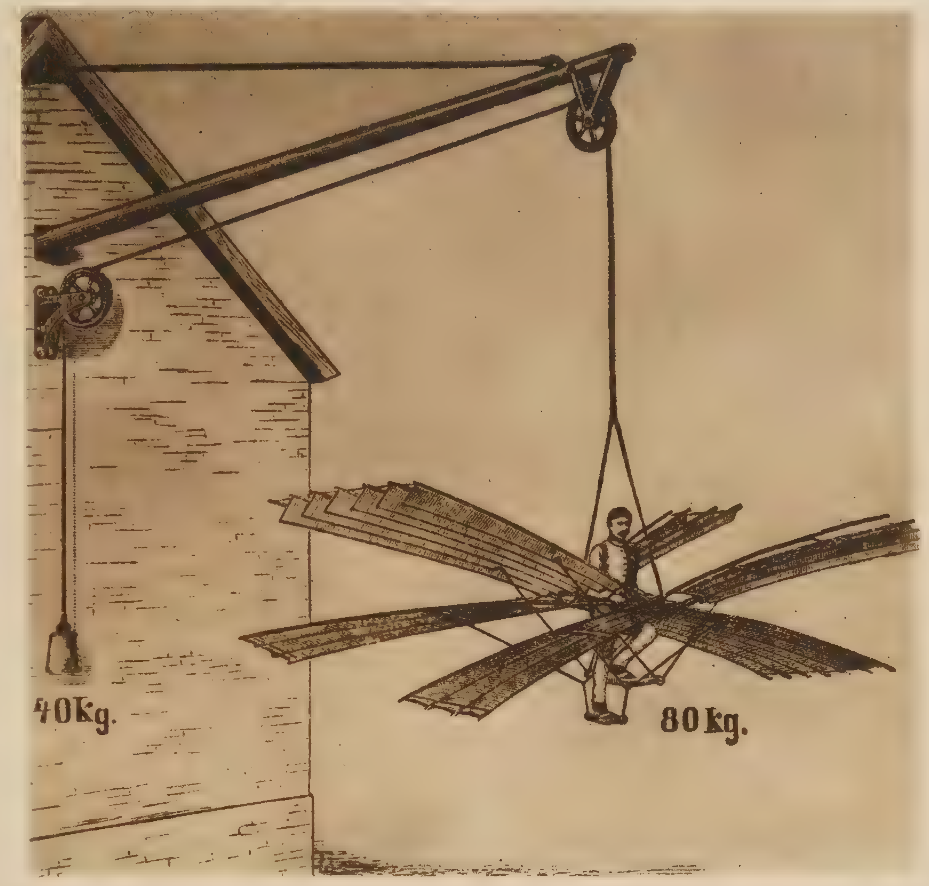
LILIENTHALS *First* FLYING *Machines in* GERMANY—1868

HERE we get our first glimpse of Otto Lilienthal, German engineer, who, with his brother Gustave, investigated bird flight and taught the world more about it than any other man.

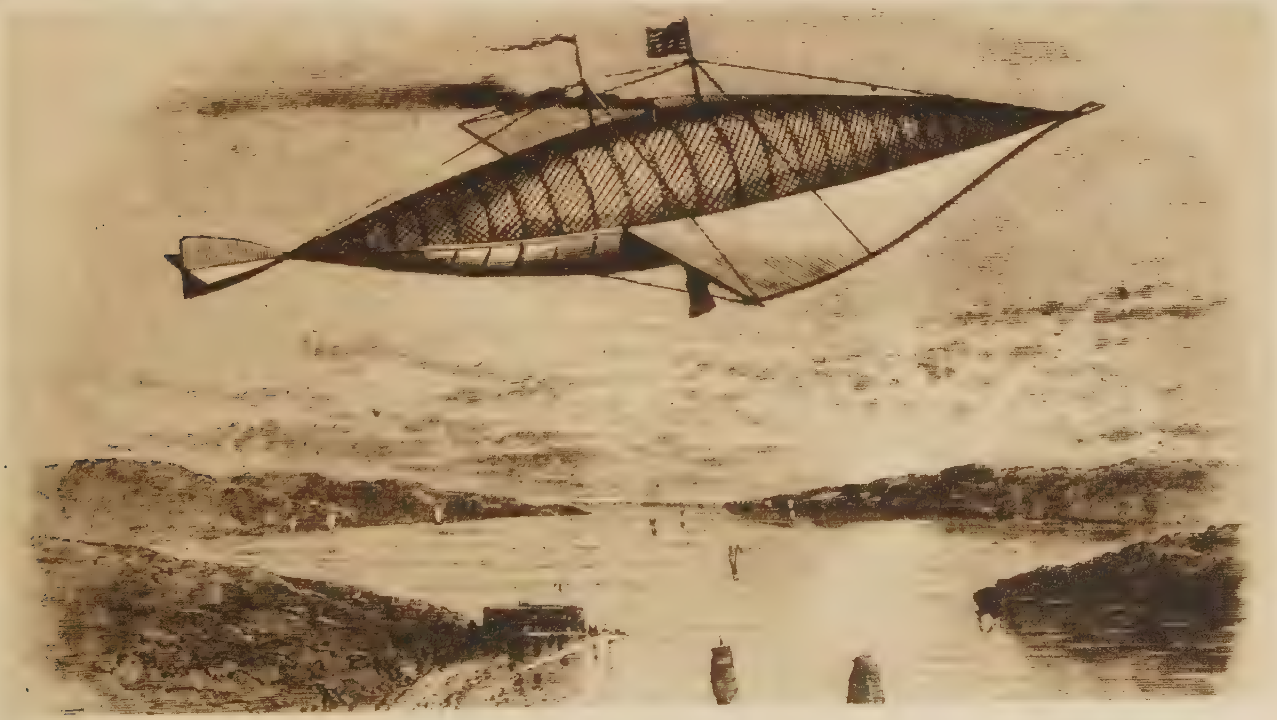
The Lilienthal story will be told in these pages—from the time when, as boys of 13 and 14 years, the brothers tried out their first flying machine in their mother's attic (1862), to the tragic death of Otto Lilienthal in a gliding flight after he had made over 2,000 such flights (1896).

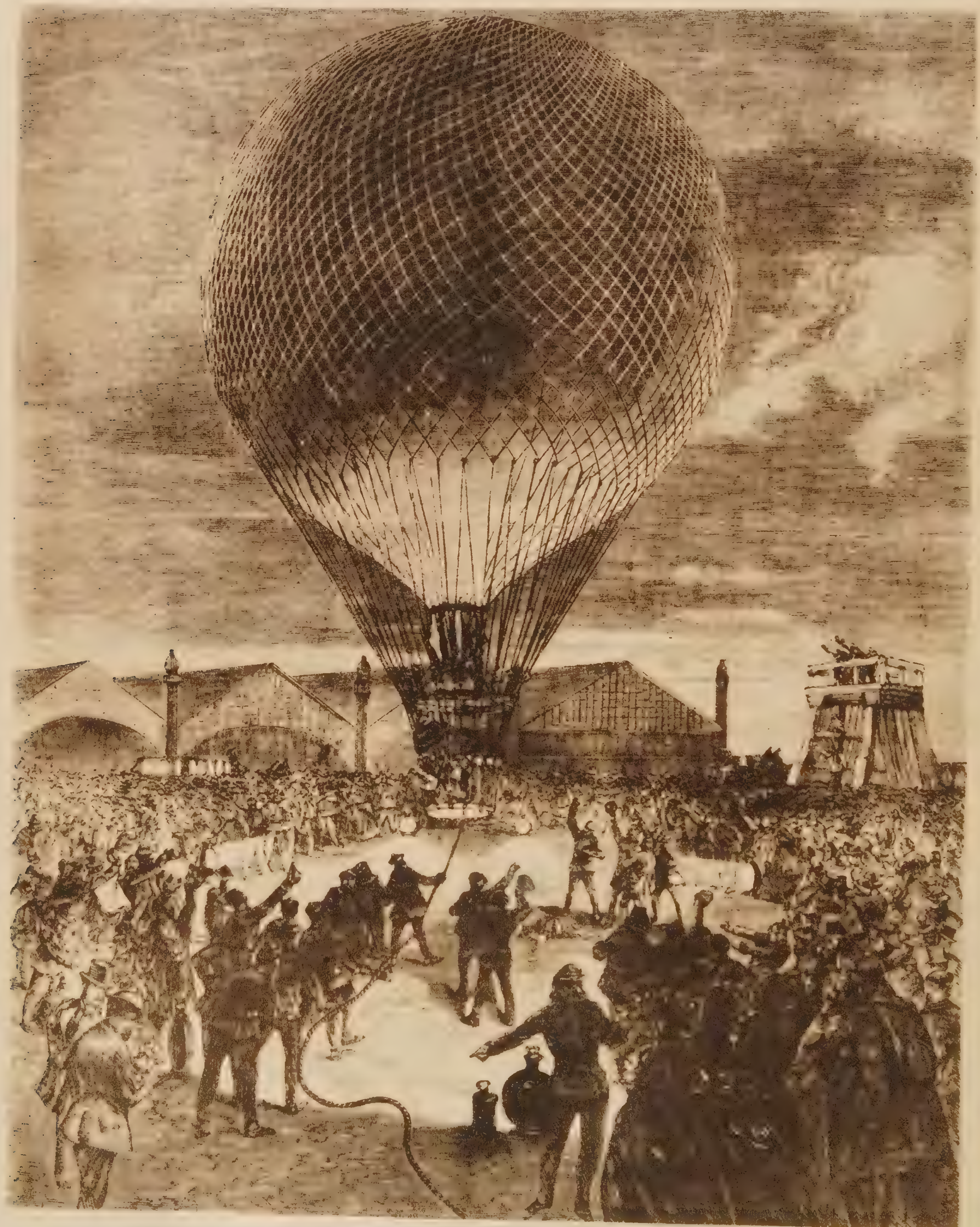
We first find the brothers (1868) in technical school trying out their flying devices in vacation, on their uncle's farm at Demnitz (right). With the flying machine attached to block and tackle on the hay barn, they have rigged a counterweight to balance the weight of the machine. The weight went down and the flyer rose.

Original sketch from *Der Vogelflug als Grundlage der Fliegekunst* ("Bird-Flight as the Basis of the Flying Art") by Otto Lilienthal.



FREDERICK MARRIOTT'S AERIAL STEAM CARRIAGE, "AVITOR"—Over Shell Mound Lake in California (1869)—Stringfellow's former partner, now a San Francisco editor, constructs this balloon-airplane combination (below). Its trial flight showed 5 miles an hour, insufficient to stem the Pacific winds, and he abandoned the idea.





SIXTY-EIGHT WAR BALLOONS ESCAPED FROM THE SIEGE OF PARIS—OLD WAR DRAWING

PART II

GENIUS *of* NATIONS *Behind* HUMAN PROGRESS

AERONAUTIC SCIENCE *in Days of* GLADSTONE *and* BISMARCK

THE "WORLD IN THE AIR" is now to become an established fact—the culmination of these 5,000 years of human progress. The Scientific Era dawns with the age of invention and industrial expansion which is to reconstruct the world, socially, politically, and economically.

We enter this period with the Franco-Prussian War (1870); the last of the Napoleons falls; France is proclaimed a republic; Germany is re-established as an empire. The Kingdom of Italy annexes Rome. Reconstruction in the United States, the aftermath of the American Civil War, leads to financial panic and economic readjustments. Spain becomes a republic (1873) and then returns to empire.

The Centennial of American Independence is celebrated with the international exposition in Philadelphia (1876) in the same year that the telephone is invented by Bell. Russia declares war on Turkey (1877); Bulgaria, Montenegro, Serbia and Roumania are made independent nations by the Congress at Berlin (1878). The Triple Alliance is formed between Germany, Austria and Italy (1883). The Greely Expedition attempts to reach the North Pole (1884).

The Science of Aeronautics weaves its way through these epochal events. The First Battle in the Air is fought in the Franco-Prussian War (1870); The Government of France is removed to Tours during the Seige of Paris, when Premier Gambetta evacuates the capital in a military balloon.

The First Transatlantic Air Voyage, from America to Europe, meets with failure (1873); Penaud and de Lome continue their experiments in France; Moy presents his "Aerial Steamer" in London (1875); Germany produces the first gas-engine dirigible, forerunner of the modern Zeppelin; and Tissandier appears with his dirigible in France.

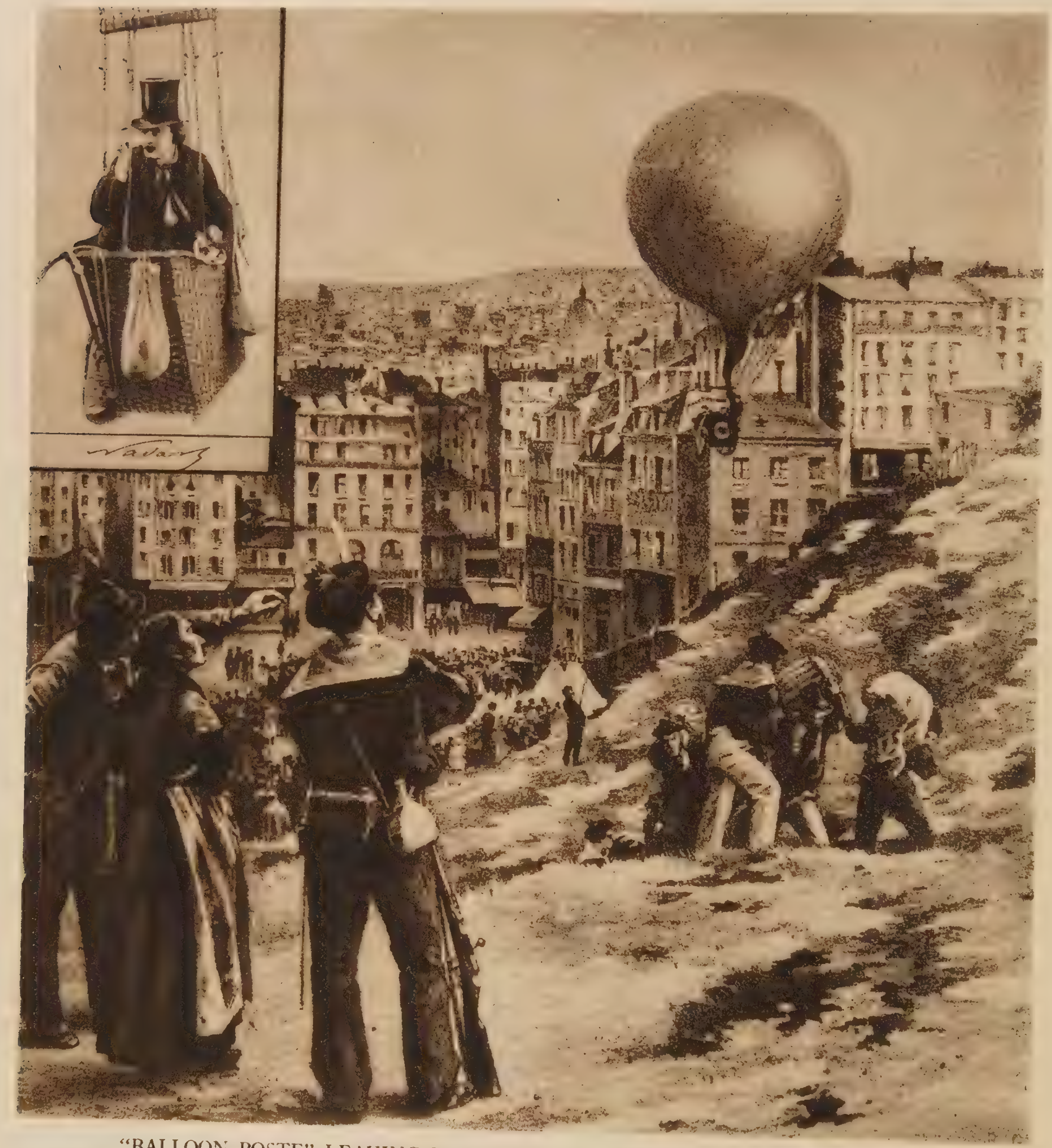
The First Flight to the North Pole is proposed in England (1877) in the year that Otto invents his gas engine in Germany, and Edison invents the talking machine and follows it with the electric light (1878). A project for the First Dirigible Flight Across the Atlantic (1879) is planned in the year that Selden patents the gasoline motor in the United States. Engineers plan an Aero Railway to climb the Alps (1880).

Edison turns his genius to the problem of aerial navigation (1880). The French establish the first telephone communication from the air (1882); the First Electrically-Driven Dirigible appears, Paris (1883); the French utilize the air in war in China (1884).

The century since the First Air Voyage in the World's History, when the Montgolfiers invented the balloon in France, is now completed. Two generations of pioneers have come and gone. The men who are to solve the age-long problem are coming into the arena. Zeppelin starting active experiments with the Airship and the Wrights in America are youths who are soon to enter the tournament.

Bismarck and Gladstone are dominant figures in world politics as we enter the final era of the Great Discovery, which we shall trace, step by step, in the priceless historical records which bring us to the final achievement.

SIEGE *of* PARIS *Brings First* "BALLOON POSTE"—1870

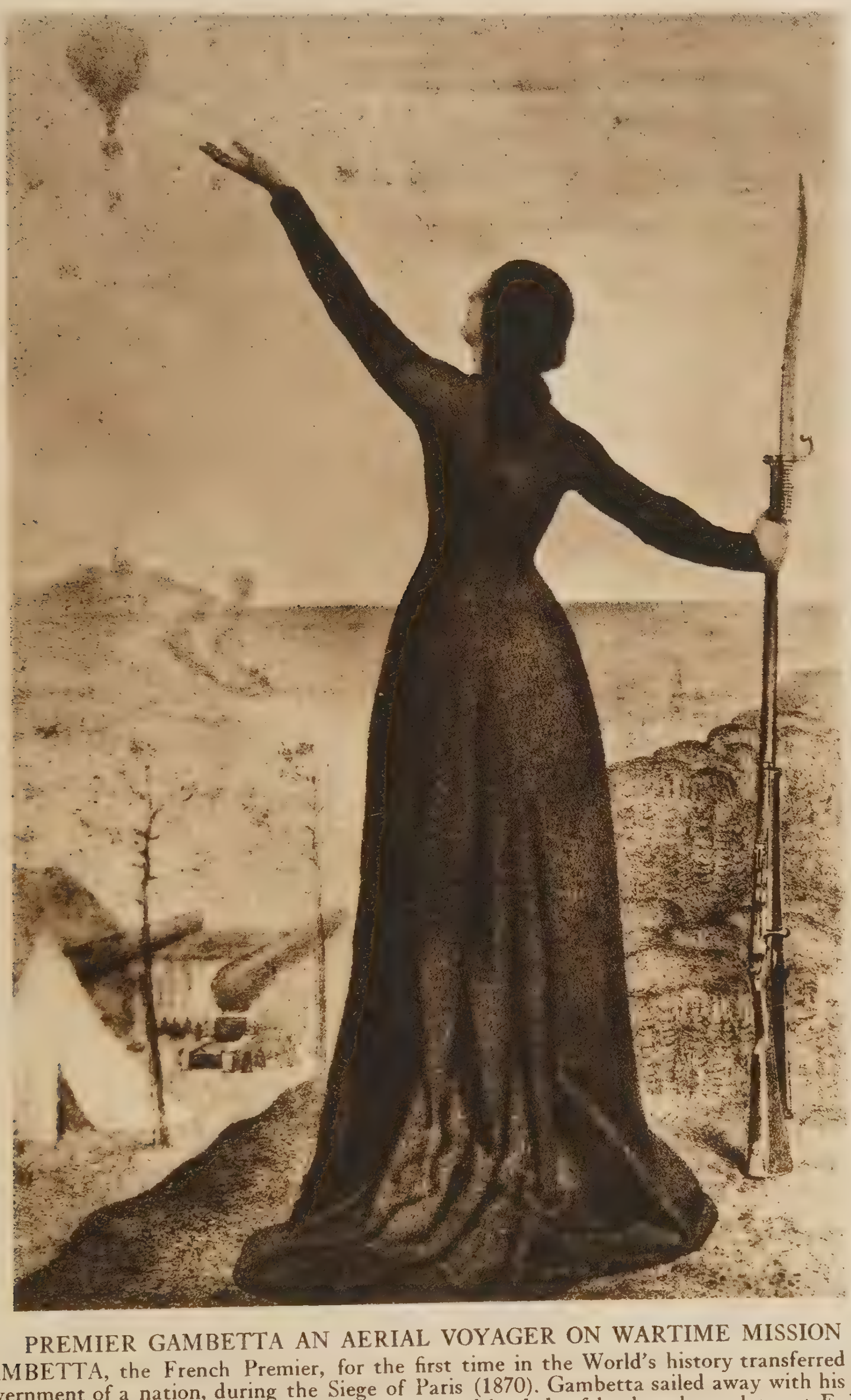


"BALLOON POSTE" LEAVING MONTMARTRE DURING THE SIEGE OF PARIS

THE Siege of Paris (September, 1870-January, 1871) brought the Franco-Prussian War to a culmination. It first established the balloon as a definite humanitarian factor in wartime as well as a military utility. Balloons were manufactured hastily in Paris railway stations to carry refugees, mail and messages to link beleagued Paris to the world outside. Only a few managed to make their precarious way back into the city. Carrier pigeons asmessage carriers added to their efficiency.

The "First Aerial Battle" in history occurred when our old friend Nadar, organizer of the "Balloon Poste" was bound into Paris from Tours. He met a German balloon at 10,000 feet altitude. The German opened rifle fire, but Nadar shot his way out of the predicament and landed his balloon safe in Paris. Coxwell, famed English aeronaut, trained the German Balloon Corps. Engraving by R. Gilbert in the Bella C. Landauer Collection.

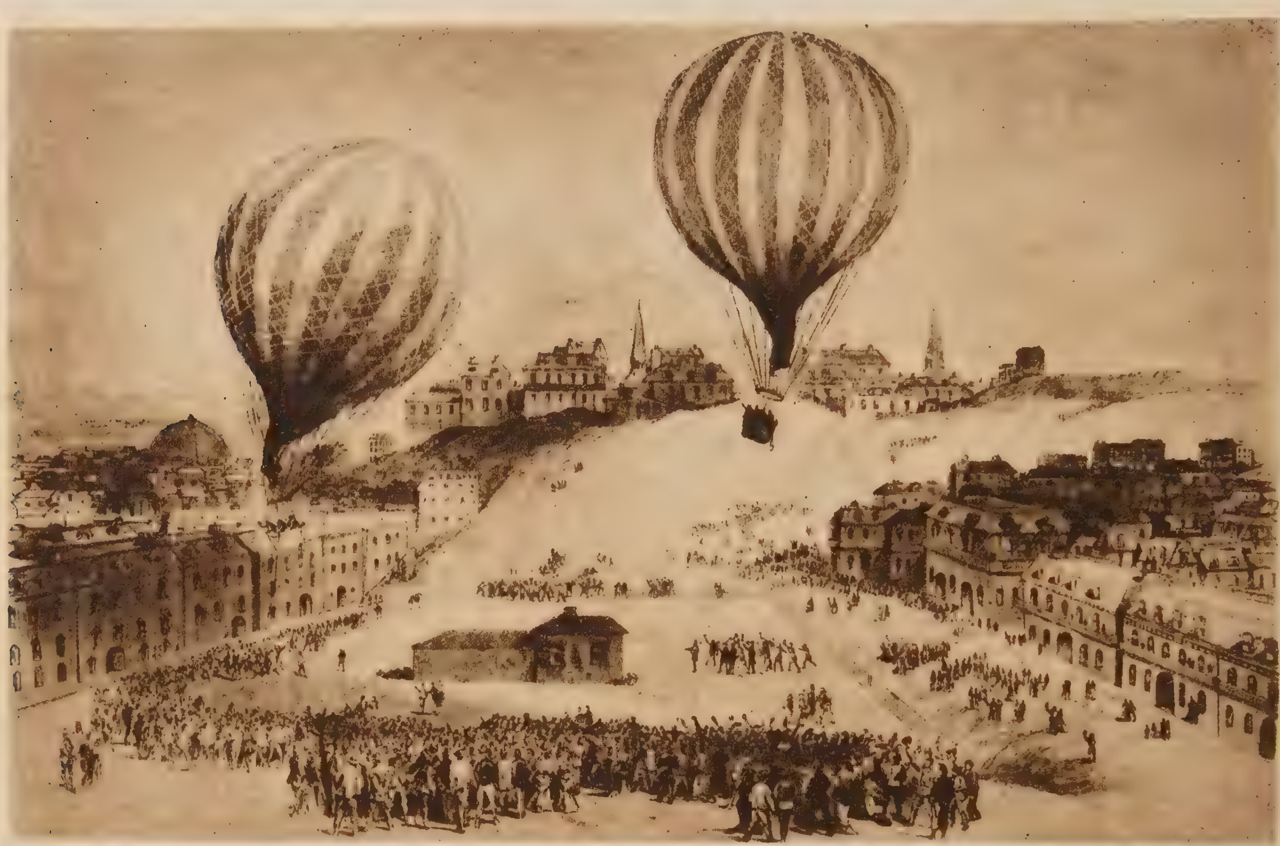
PREMIER *Transfers* CAPITAL *of* FRANCE *by* AIR—1870



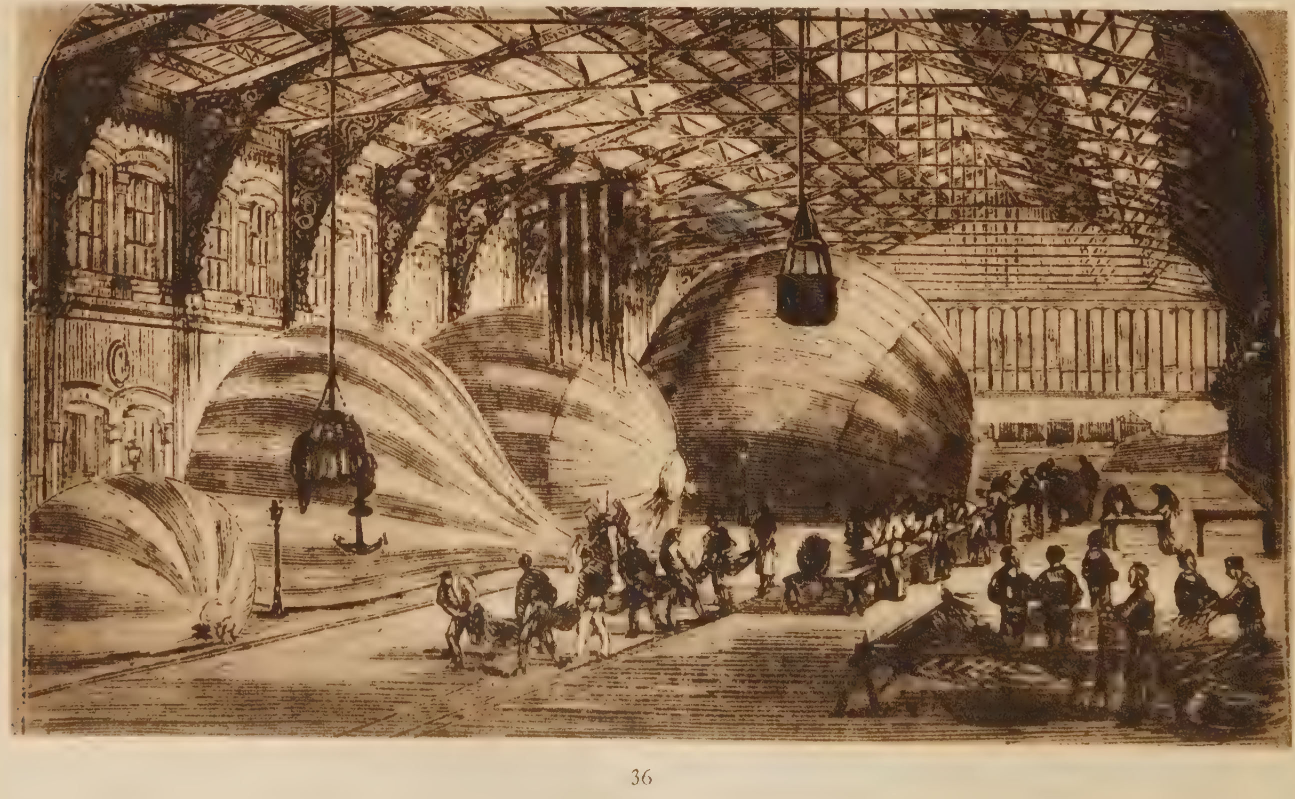
PREMIER GAMBETTA AN AERIAL VOYAGER ON WARTIME MISSION

LEON GAMBETTA, the French Premier, for the first time in the World's history transferred by air the seat of Government of a nation, during the Siege of Paris (1870). Gambetta sailed away with his secretary from Montmartre (October 6, 1870) in Godard's balloon, and landed safely three hours later at Epineuse, whence they made their way to Tours and set up the French Government.

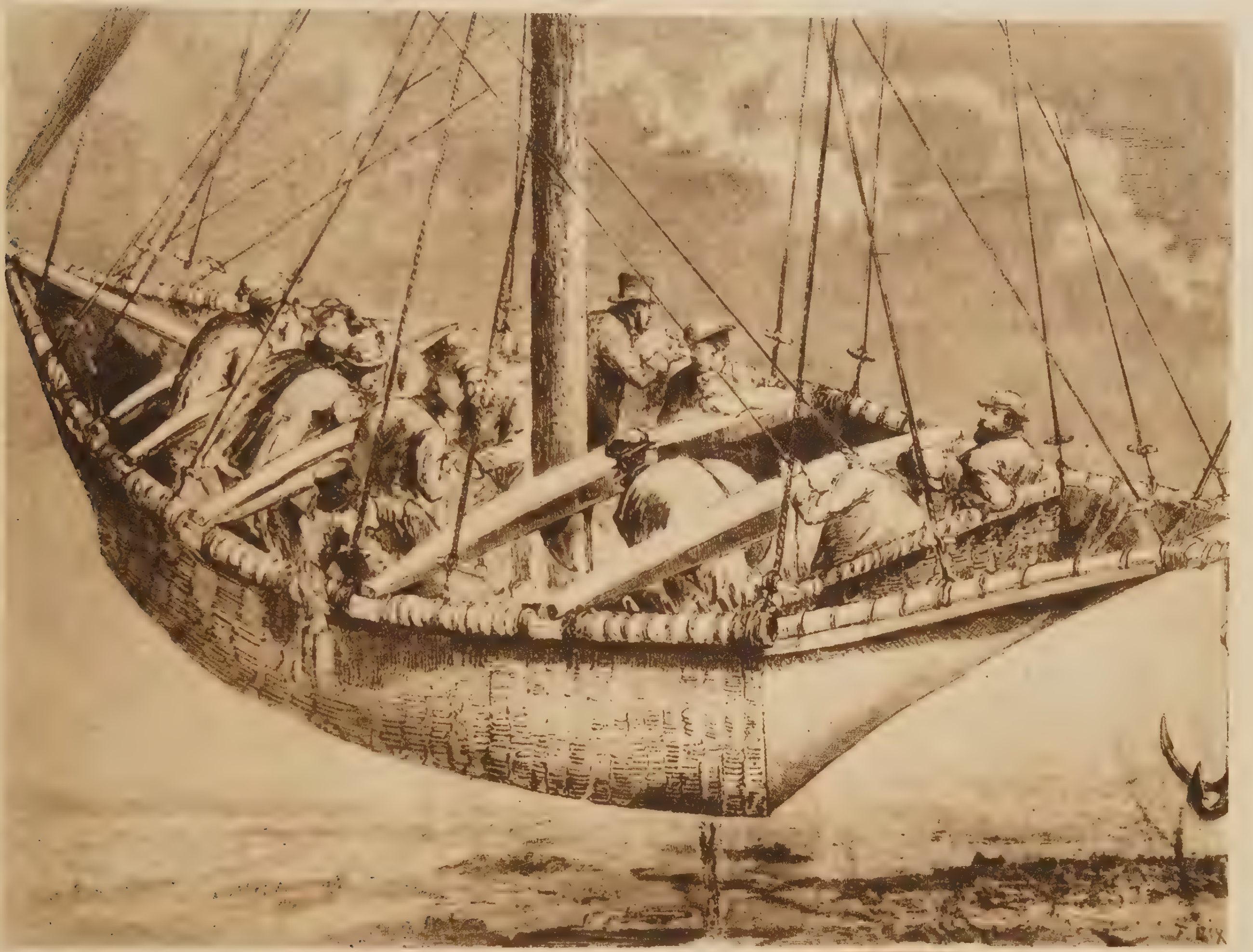
He rallied the armies in the field, raised devision after division of fresh troops, rode rough shod over lesser men and by his initiative and driving energy fought desperately to prevent the humiliating peace with Germany (January 1871). The painting here presented is by Puvis de Chavannes (1824-1898), distinguished French artist, who went through the Seige of Paris.

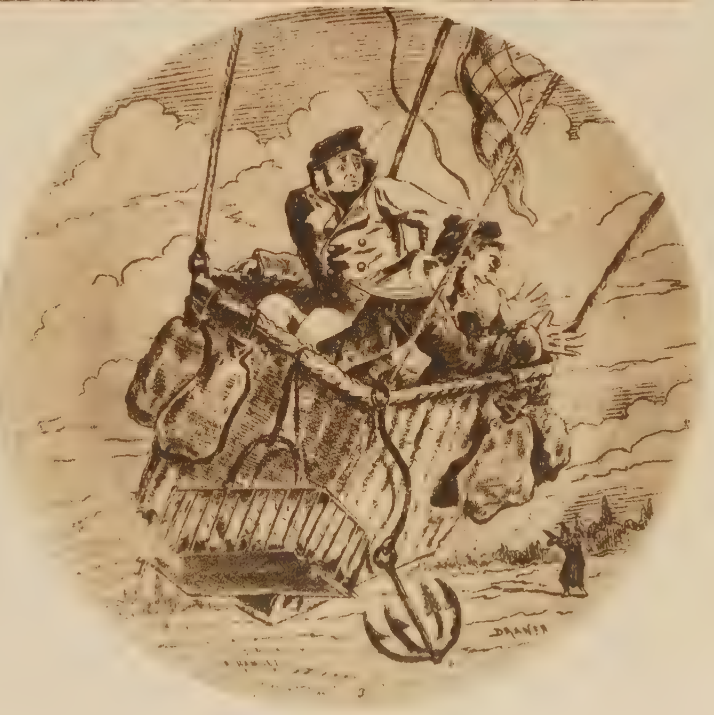


FRENCH PREMIER, GAMBETTA, LEAVING PLACE ST. PIERRE—Scene at Montmartre, Paris, (above) as balloon sails for the French provinces (October 6, 1870). Three Americans are escaping from besieged Paris at the same time, in another balloon. Scene (below) shows manufacture of balloons in a Paris railway station during Franco-Prussian War. Prints in Library of Congress.



CRISIS *in* FRENCH CAPITAL—*Defence from the* AIR—1870





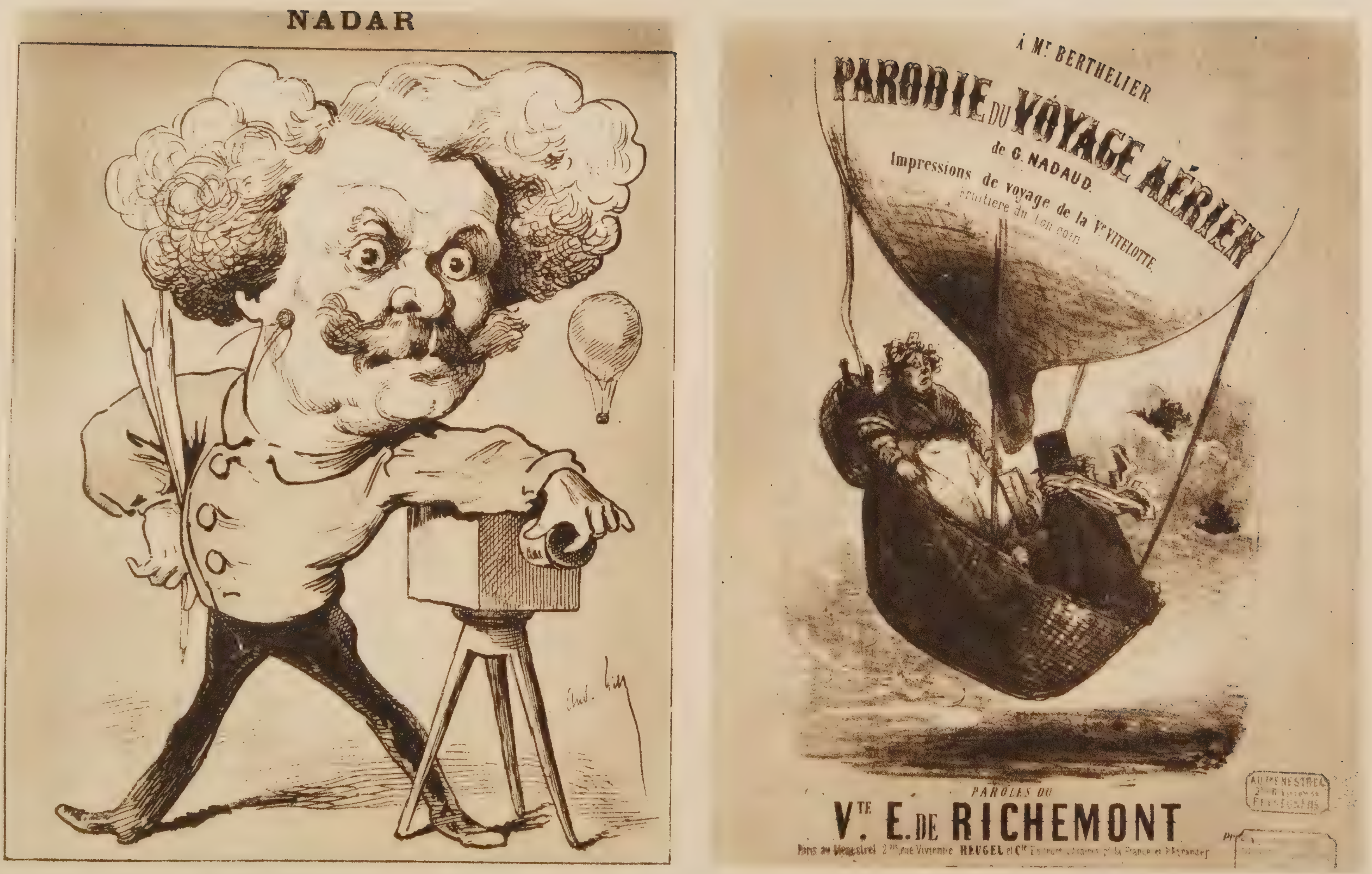
ESCAPING FROM BESIEGED PARIS—Stanislas-Charles Henri-Laurent Dupuy De Lome (1816-1885), distinguished French naval architect, designed and built a great dirigible balloon during the Franco-Prussian War to fly from the City of Paris.

This was ready a few days before the capitulation of Paris (January 1871). Its trial trip came after the close of the war. We see the open, boat-shaped car (above). At the bow was a four-bladed propeller. No light engine was available and Dupuy de Lome was forced to depend on manpower—eight men on a windlass.

Dupuy de Lome, as Chief Constructor of the French Navy, built the first steam warships and is father of the armored battleship. He was a member of the Committee of Defence which took the reins of Government when Napoleon III fell (September, 1870). In this official position he was given a credit of 40,000 francs to produce this steerable balloon—which, with greater, more dependable power, would have opened a new Era.

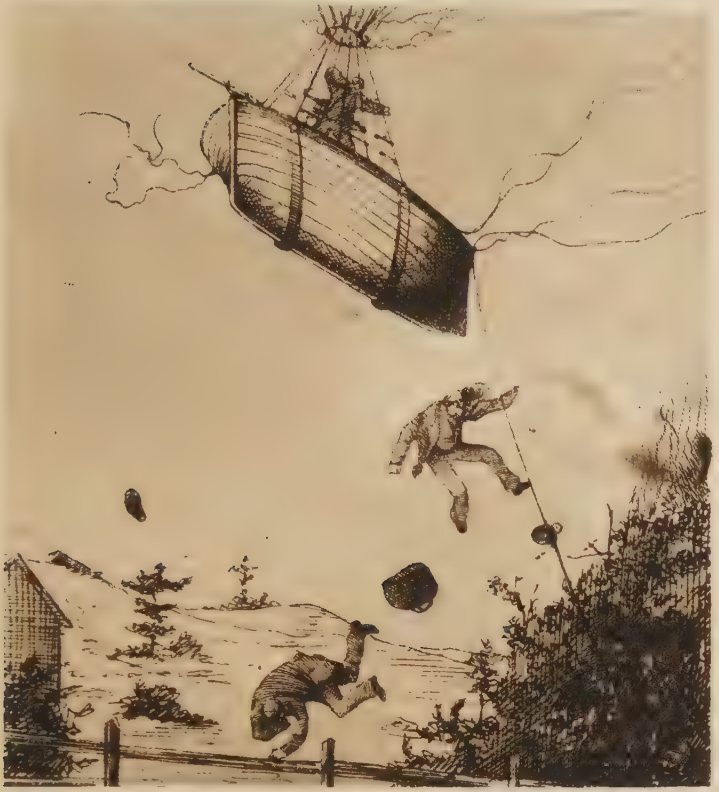
Nadar, Eugene Godard and his brothers Jules and Louis, Gaston and Albert Tissandier—these and other patriots rallied to the tricolor and built and flew war balloons for France.

Old prints in Collection of Comte de la Vaulx.

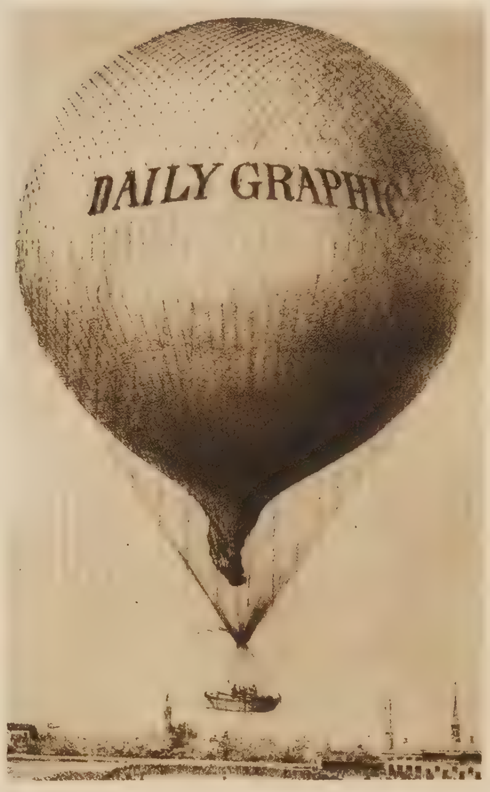

NADAR
And. Gill
Á Mr. BERTHELIER
PARODIE DU VOYAGE AÉRIEN
de G. NADAUD.
Impressions de voyage de la Ve VITELOTTE,
fruitière du bon coin
PAROLES DU
Vte. E. DE RICHEMONT
Paris au Ménestrel 2bis rue Vivienne HEUGEL et Cie
AU MÉNESTREL

FAMOUS CARICATURES OF NADAR—ORGANIZER OF "THE BALLOON POST" IN THE FRANCO-PRUSSIAN WAR (1870)—Felix Nadar was subjected to droll taunts by the noted French cartoonist, Gill (left). We have seen Nadar building and operating his great balloon, "The Giant," (1863) to raise money for the "*Societe d'Aviation*" that he and Landelle and Ponton d'Amecourt had founded. He is a figure of importance in aeronautics. He lived to see Wilbur Wright fly his airplane in France. Nadar's fame is further testified to by the caricature of his balloon on the title page of sheet music (right). Through the whole story of flying from the invention of the balloon (1783) to the present time, leading figures and principal incidents have inspired popular songs. Many of the most distinctive of these are in the Bella C. Landauer Collection, from which come both exhibits on this page

First TRANSATLANTIC *Flight Meets* DISASTER—1873

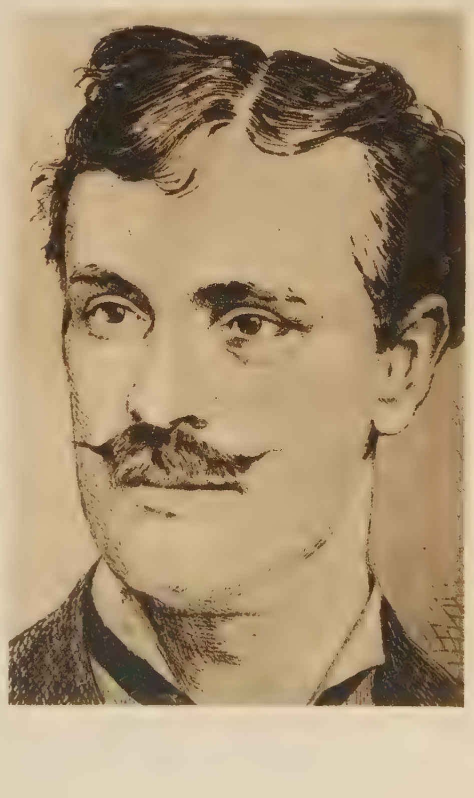


END OF FIRST ATTEMPT TO FLY ACROSS ATLANTIC
Contemporary Sketch in the Henry Miller Collection.



TRANSATLANTIC BALLOON (Above)
Henry Miller Collection

WASHINGTON DONALDSON (Below)



AMERICA'S leading mid-Victorian aeronaut, John Wise, now appears for the last time (1873) with his long-proposed Transatlantic Balloon Voyage. He built a huge balloon of 400,000 cubic feet gas capacity, with a great whaleboat for a balloon car and planned to sail over the Atlantic from New York to London.

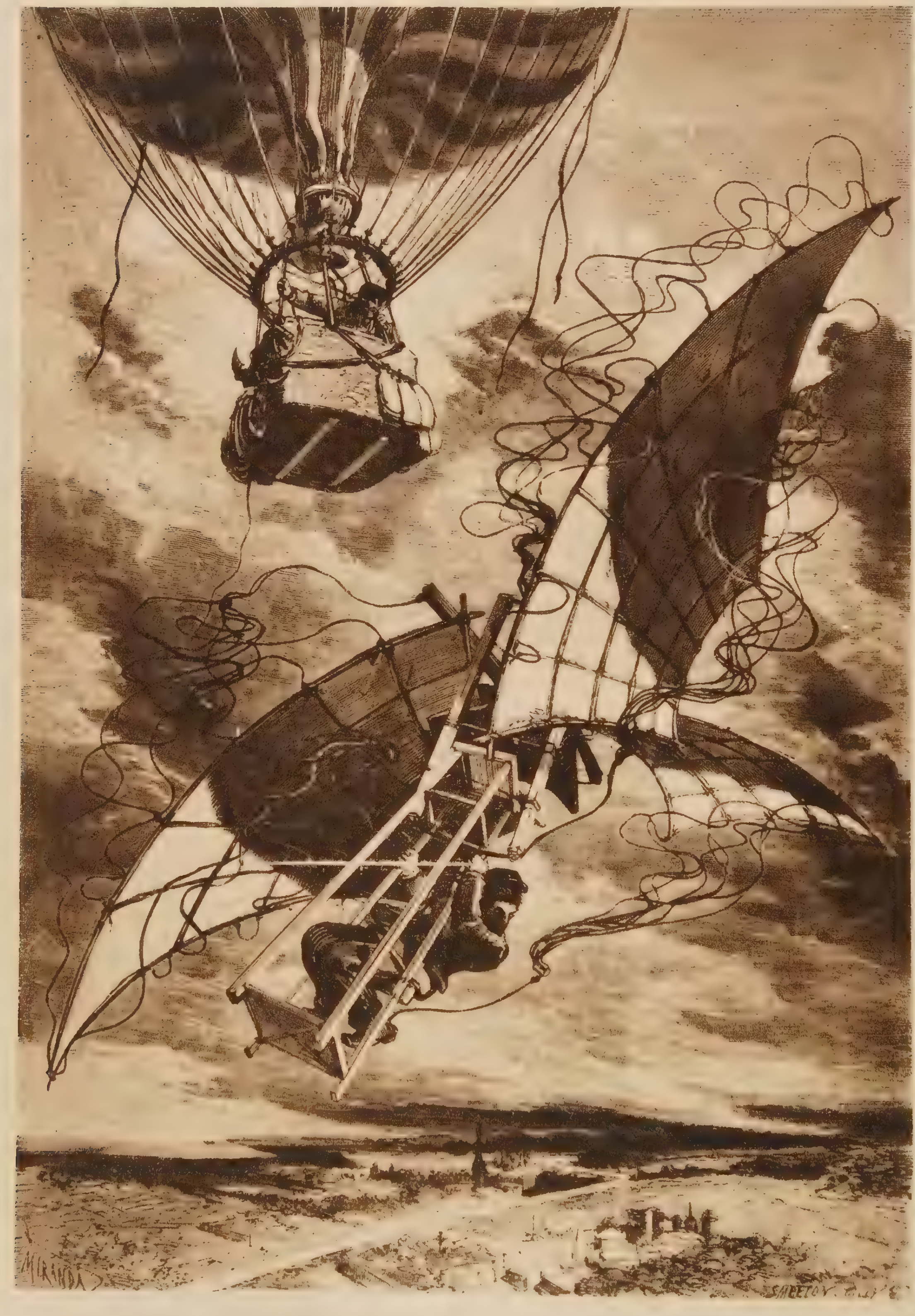
The Great Adventure started in Brooklyn, New York, and came down precipitately a few hours later—not on the far side of the Atlantic, but in New Canaan, Connecticut—only 41 miles away. It was not piloted by Wise, however, for at the last moment he disagreed with his backers and Washington H. Donaldson, another famous aeronaut, was placed in charge of the flight. With him were Alfred Ford, a Brooklyn newspaper man, and George Ashton Lunt, as navigator.

Wise had been planning to cross the Atlantic in a balloon for thirty years. He caused to be published in the *Lancaster (Pennsylvania) Intelligencer* (1843) an announcement "To All Publishers of Newspapers on the Globe" of his intention to make the transatlantic balloon trip the following year. He petitioned Congress (December 20, 1843) for a naval appropriation (of $10,000 or $15,000) with which to make the attempt, and his petition was pigeonholed. Archibald McRae and Silas Bent, passed midshipmen of the United States Navy, offered to go as navigators.

Wise believed that a steady current from west to east, far above the earth, blew at as high as 60 miles an hour and depended on this to carry him to Europe. He had a composition which rendered his balloon fabric impervious to hydrogen gas—so that he could remain in the air two weeks if need be. The *New York Daily Graphic* finally financed Wise's adventure—with the result noted above. The mammoth balloon crashed in New Canaan. Ford and Lunt jumped from the imperiled ship. Donaldson stuck to his post and was carried a mile further on before the balloon crashed.

John Wise was eventually drowned (1879) in a balloon disaster in Lake Michigan. Donaldson was lost in the same body of water two years after the transatlantic disaster.

First GLIDER PARACHUTE *Falls to* TRAGIC END—1874



TRAGEDY
at
Cremorne
Gardens
in London
(July 5, 1874)

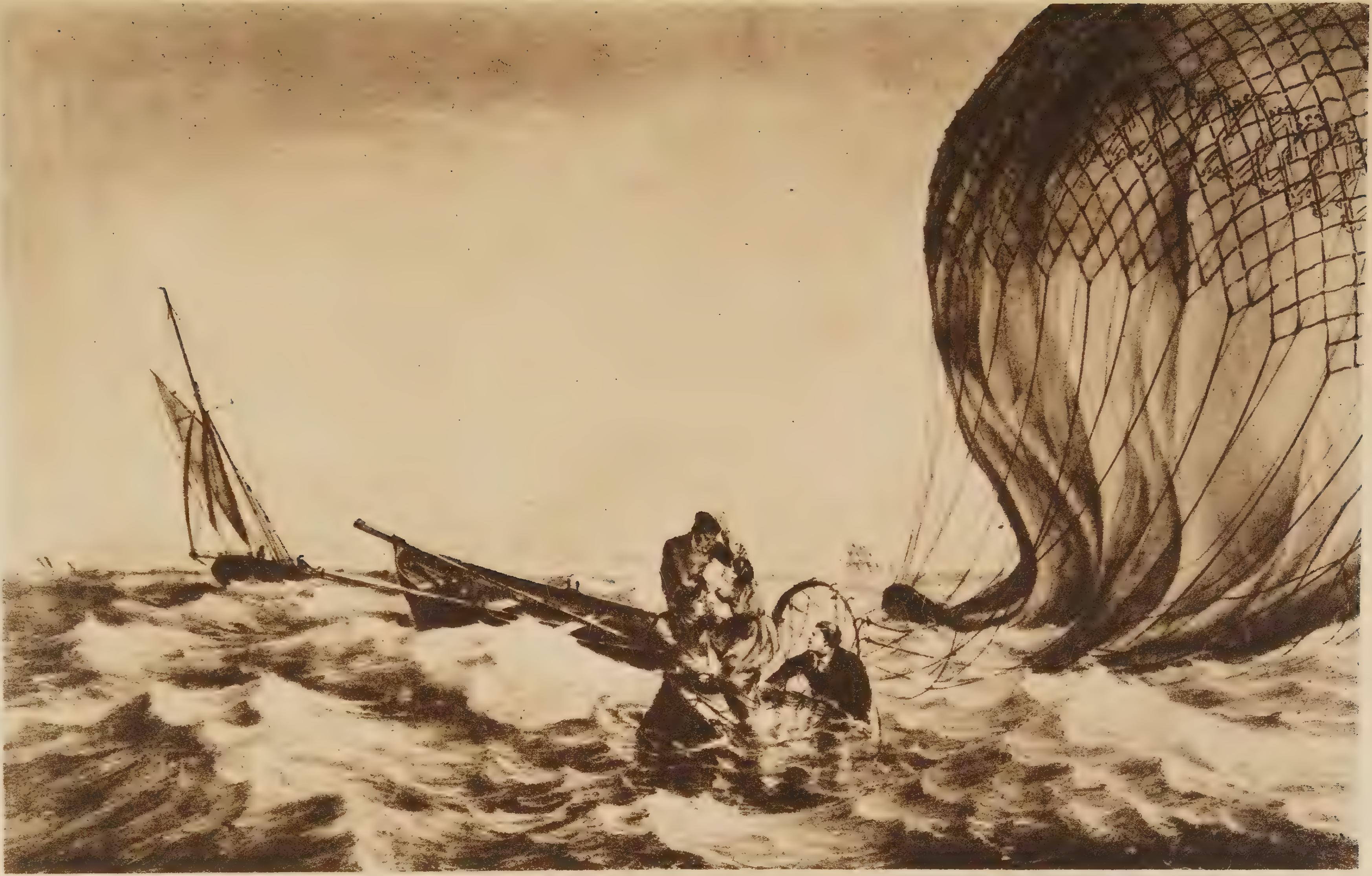
De Groof,
Belgian
Inventor,
ascended
with his
FLYING
MACHINE
attached
to
Simmon's
Balloon

When up
1000 feet
De Groof
"cut loose"

His wings
quickly
collapsed
and he
came down
like a
plummet,
and was
instantly
killed
by his
terrific
fall
from the
clouds.

English
Engraving
in the
Collection
of
Bella
Landauer

FATAL FALL FROM CLOUDS SHOCKED EUROPE—De Groof was a Belgian shoemaker. He invented this "Beating-Winged Flyer," which was a Glider-Parachute. Failing to get it tested in Brussels and Paris, he went to London. His first test (June 29, 1874) worked successfully while attached to a balloon.

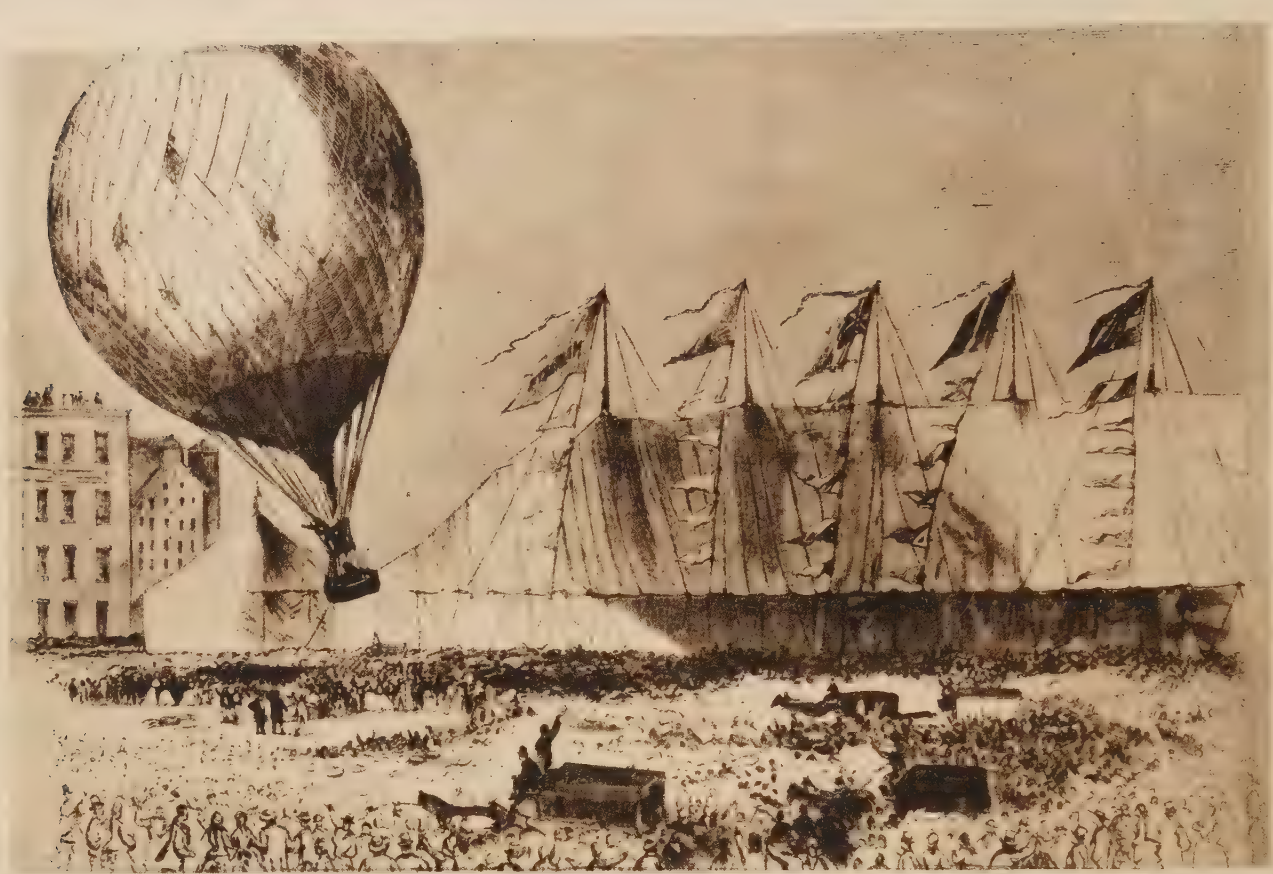


THE RESCUE OF MONSIEUR AND MADAME DURUOF FROM THE BALLOON "TRICOLOR"

TRAGEDY was narrowly averted (September 1, 1874) when William Oxley and his son, of Grimsby, England, rescued Monsieur and Madame Duruof, French balloonists, from their sinking balloon, "*Le Tricolore*," in the English Channel, some miles off the English coast.

Word reached Great Grimsby, the English fishing port at the mouth of the Humber river, that a French balloon was down in the Channel. The Oxleys sailed off in their sloop to the rescue. The Duruofs had drifted out across the Channel after an ascension on the French side; their gas supply had proven insufficient and their balloon basket was barely holding them up when their rescuers reached them.

SKY-LARKING *in* AMERICA *Becomes a* JOLLY *Pastime*—1875

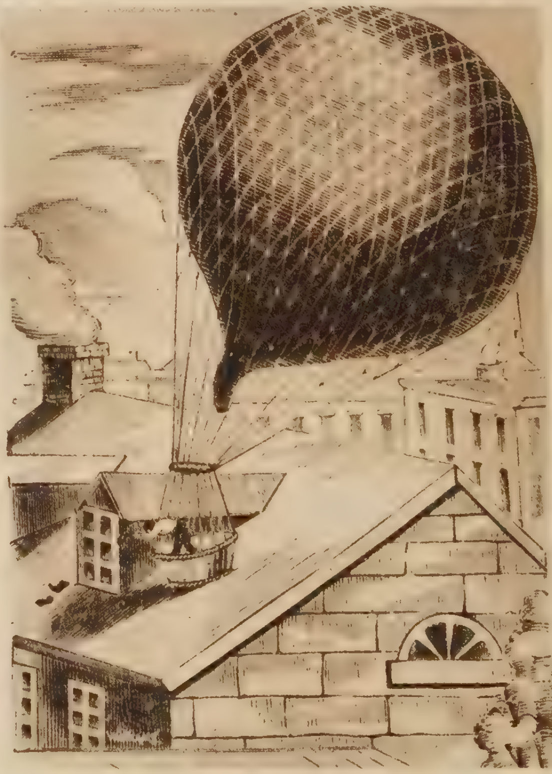


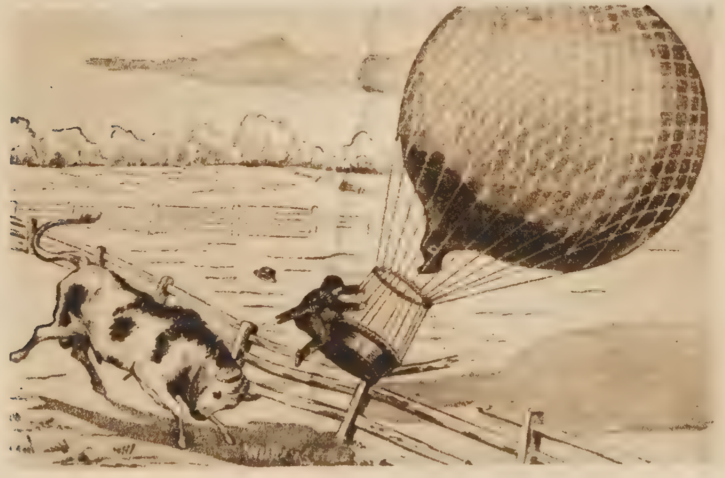
DONALDSON'S FATAL ASCENT FROM BARNUM'S HIPPODROME IN CHICAGO (July 15, 1875). Old print in the Chicago Public Library.

WASHINGTON H. DONALDSON, of Maine, was a "celebrated American aeronaut" after the Civil War. He ballooned with Carlincourt Lowe and John Wise and engaged in many adventures alone—"challenging death."

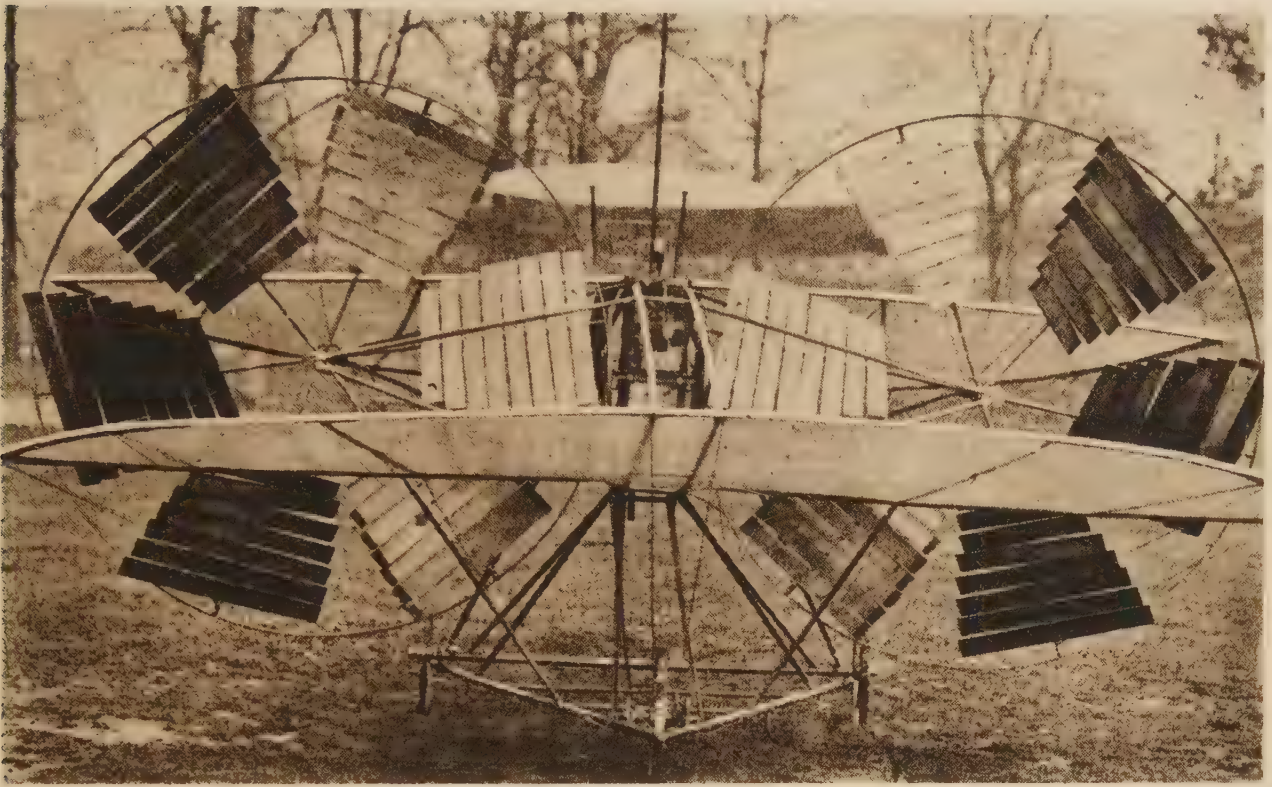
We see him barely missing a roof, by throwing out hat, coat and boots (right) and again just escaping from being gored by a bull.

Donaldson's last ascent was from the Chicago Hippodrome at 4.30 P.M. July 15, 1875, with a Mr. Grimwood. There was a fearful storm that night. His balloon was sighted by a lumber schooner off Grosse Point, 30 miles away, at 7 P.M. bobbing up and down on the water. Suddenly, it shot up into the air before it could be reached. Neither balloon nor passengers were ever seen again.



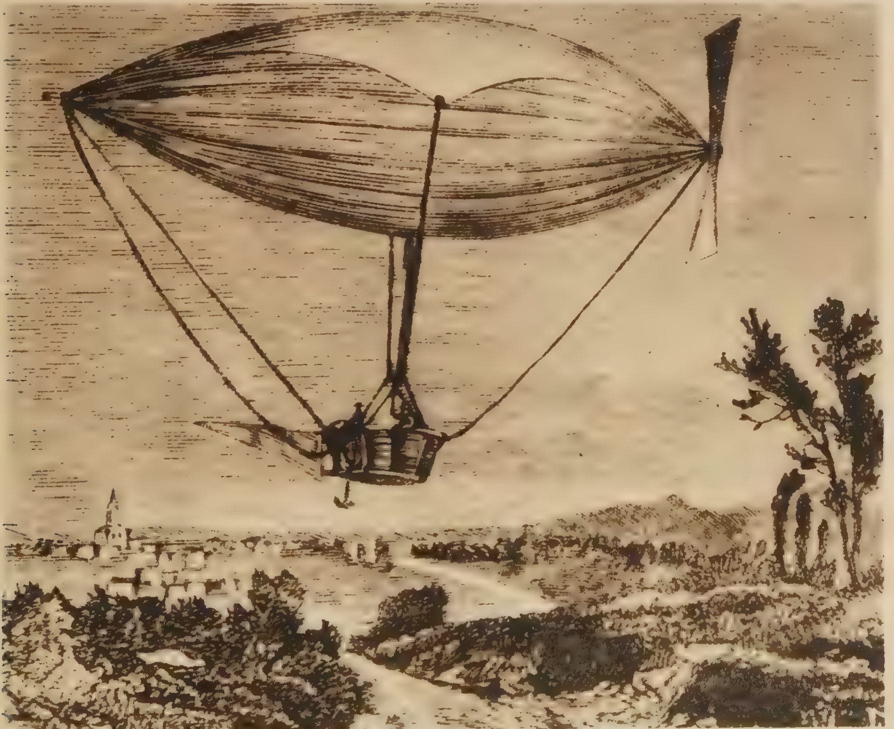


AERIAL STEAMER *Tested at* CRYSTAL PALACE, *London*—1875



INVENTION OF THOMAS MOY, English engineer in the Royal Aeronautical Society. He claimed to be "First to Demonstrate the Possibility of Flying by Steam Power." He and R. E. Shill built an "Aerial Steamer" (above) which was tried out at Crystal Palace, London, (1875).

Moy's "Steamer" actually lifted its 120 pounds a few inches above the board track on which it travelled, with its 3-horsepower steam engine. His persistence in investigating the problem of human flight was a factor in its solution.



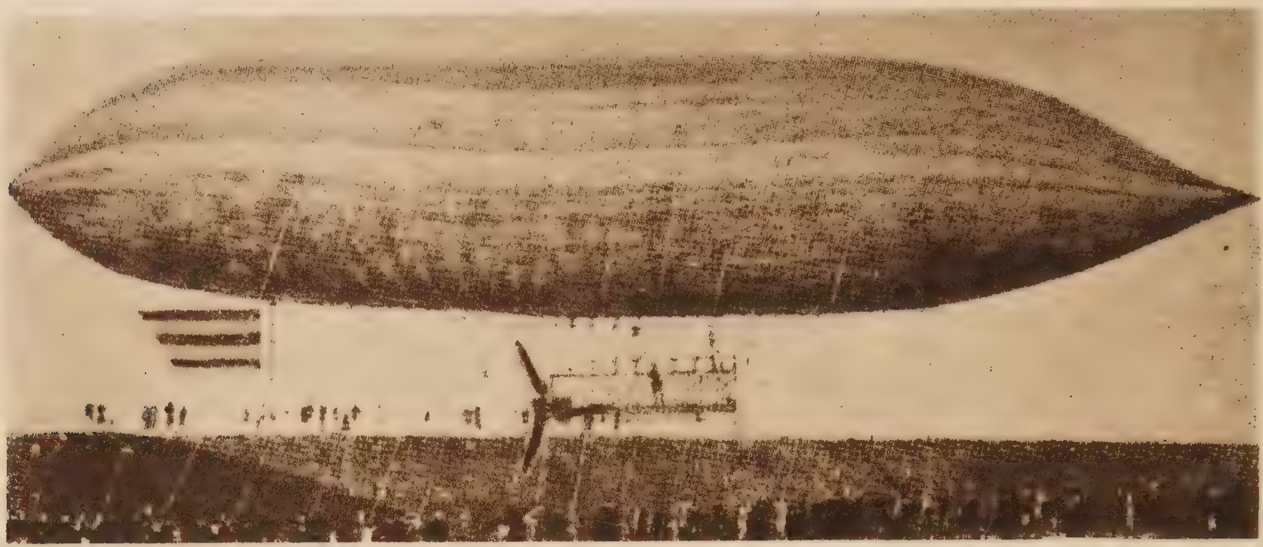
"We want to fly," Moy would say in his curt fashion. "Can it be done? Let us go to fundamentals. There is no perceptible pressure on an object moved slowly through the air, but there is immense pressure if it be moved fast."

Moy urged a flying speed of 150 miles an hour (55 years ago). Rapid strides made by himself and others in developing the light steam engine convinced him that Henson and Stringfellow might have succeeded in flying had a more powerful light engine been available.

Moy was converted from long advocacy of "lighter-than-air" aerial navigation to the "heavier-than-air". Photograph of Moy's machine (above) in Collection of Royal Aeronautical Society.

ITALIAN AIRSHIP—We see (left) "the newly-invented airship of Professor P. Cordenons of the Lyseum of Rovigo, Italy" (1876), from an old engraving in the New York Public Library.

GERMANY *Produces* FIRST *Gas-Engined* DIRIGIBLE—1875

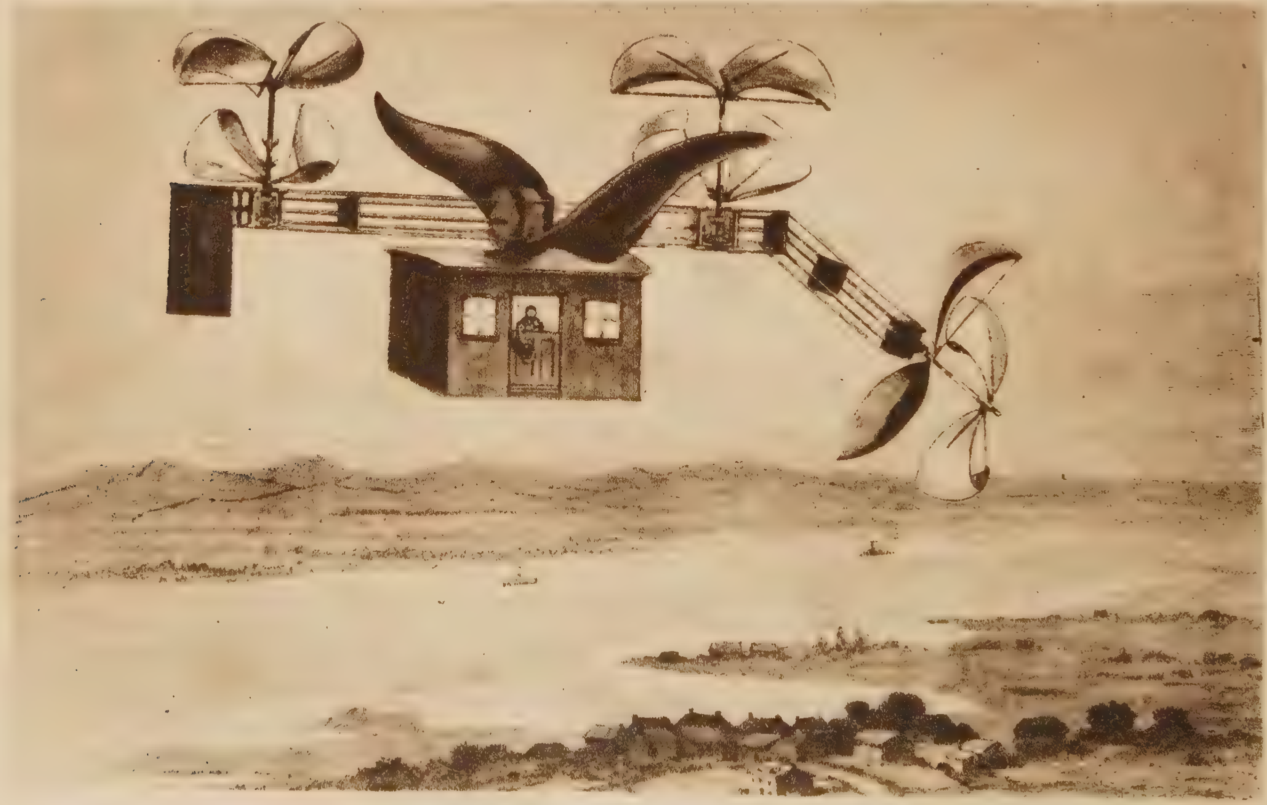


PAUL HAENLEIN (1835-1905), GERMAN ENGINEER was the first to build and fly a dirigible balloon powered with an internal combustion (gas) engine—true ancester of the modern Zeppelin (above). He spent some time in London and was a member of the Royal Aeronautical Society. He used for fuel the same coal gas which kept his ship aloft, drawing it from the containers within the envelope and replacing its weight with air pumped in.

Haenlein patented (England, 1865) the "Earliest Known Airship with Semi-rigid Frame." He built it in Germany. Proving his airship's dirigibility, he made successive improvements in later models and finally (1875) was first to plan such an airship with several cars suspended beneath, each with a motor, a practice later to become standard.

FLYING CAR APPEARS AS BELL INVENTS TELEPHONE (1876)—W. J. Lewis of New York, designed this odd-looking flying machine (below). He claimed to have flown a model of this design by means of the four helicopter air screws, twin propellers astern, and wings over the box-car cabin.

Lewis was said to be about to build a full size machine which would "Fly to Philadelphia and Return at 100 Miles an Hour" (Leslie's Weekly—December 30, 1876). There is no record of practical results.



TISSANDIERS *Suffer for* SCIENCE *in* UPPER AIR—1875

THE TISSANDIER BROTHERS, Gaston and Albert, French scientists, hold a high position in the progress of the science of aeronautics.

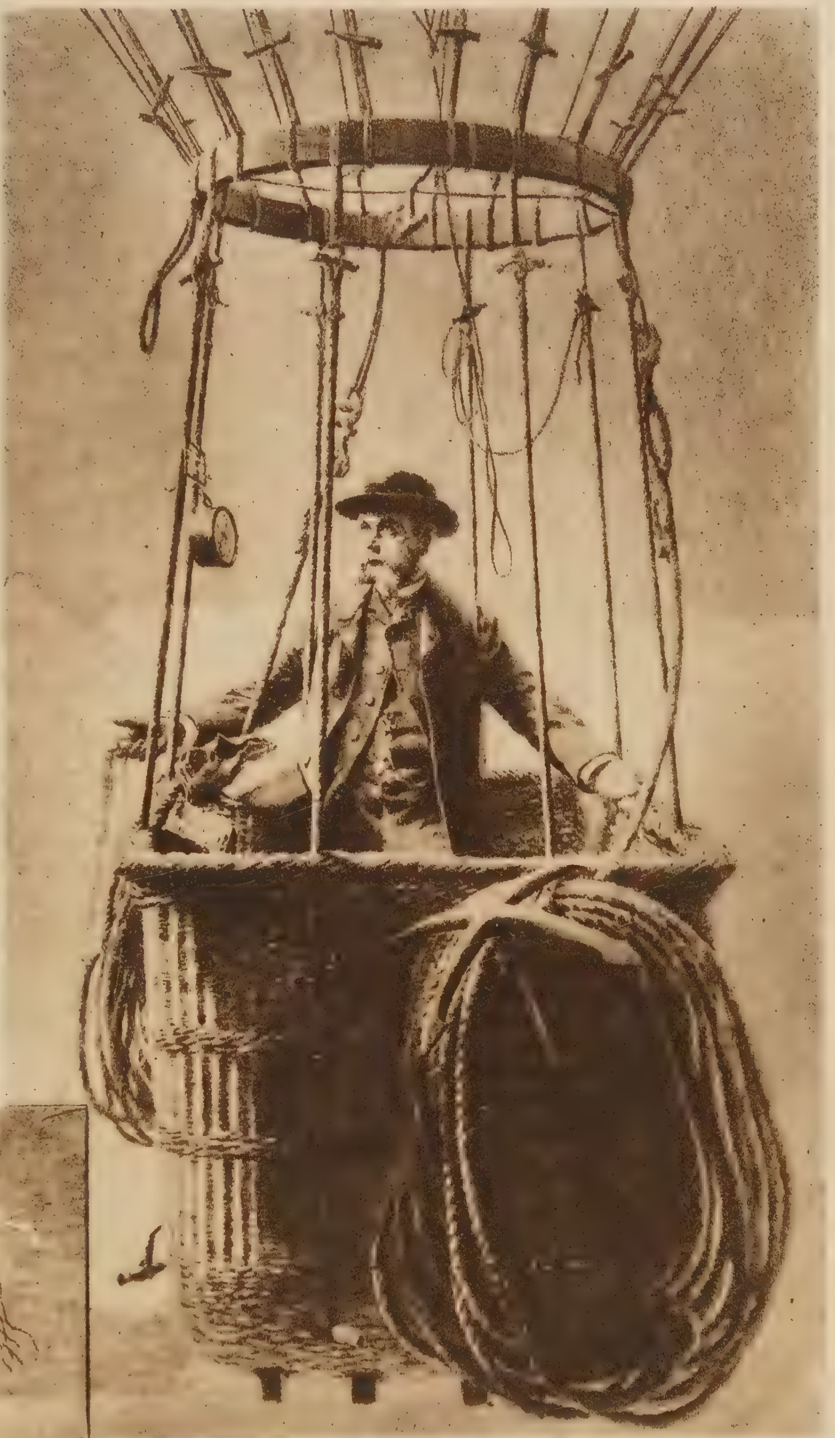
Paul Tissandier, son of the first, upholds the family tradition. Tissandier is a name of great eminence in France.

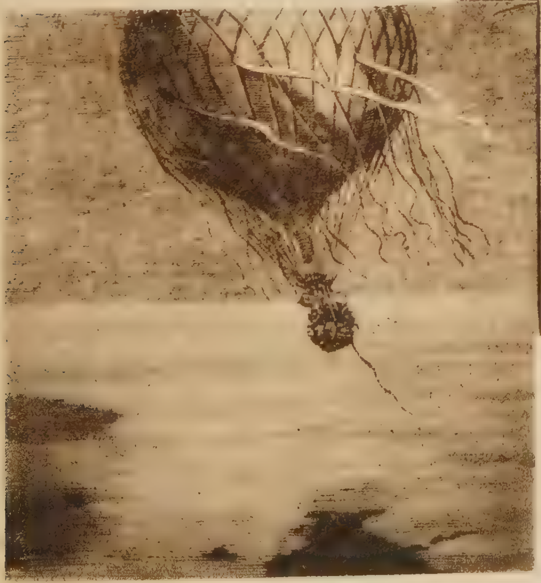
The elder Tissandiers, and their scientist associates, made many historic flights. They adventured into the higher strata of the earth's atmosphere, carrying telescopes of latest design, with the best and most dependable measuring and recording instruments then known.

Their sole intent was to add to the sum total of human knowledge—and they accomplished their purpose—till dark tragedy ended their series of ascents for the time.

The Tissandiers suffered hardship and privation in the upper air—intense cold and the rays of a pitiless sun—and danger incredible to those who saw these pioneers set off in the interest of science. Frequently, they rose to such a height that they lost consciousness. On one occasion every member of the expedition lost consciousness. To lose the power of moving arms or legs was no rare experience. Science at that time knew no equipment for maintaining circulation or supplying oxygen to gasping lungs; and these gentlemen left posterity in their debt.

The engraving (right) of Gaston Tissandier in a balloon ascent (1875) is by Maurice Leloir in the remarkable Collection of Aeronauticana of Paul Tissandier in Paris.

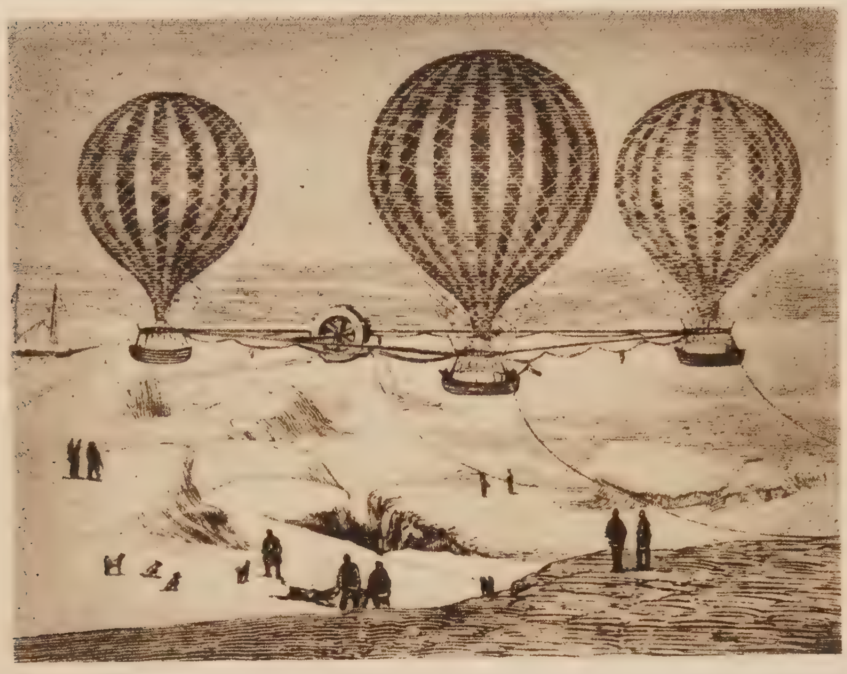




H. T. Sivel and J. E. Croce-Spinelli, French scientists, lost their lives in a balloon tragedy which shocked the world (1875). With Gaston Tissandier they penetrated the air above the earth to a height of 27,950 feet—five and a half miles—in a balloon ascent in behalf of scientific research.

The balloon came down safely—but only Tissandier was alive—barely alive, but he pulled through—the other two had been asphyxiated. This stopped scientific altitude ascents for a long time. Contemporary print (left) in the Bibliotheque Nationale.

FLYING MACHINE *for* EXPEDITION *to* NORTH POLE—1877



COMMODORE CHEYNE, of the British Navy, proposed (1877) to go to the North Pole by balloon. He planned to take six men and three tons of stores, dogs, sledges and other gear.

Three balloons were to be coupled up to go from their ship's Farthest North to within 20 miles of the Pole, where dog sledges would be used.

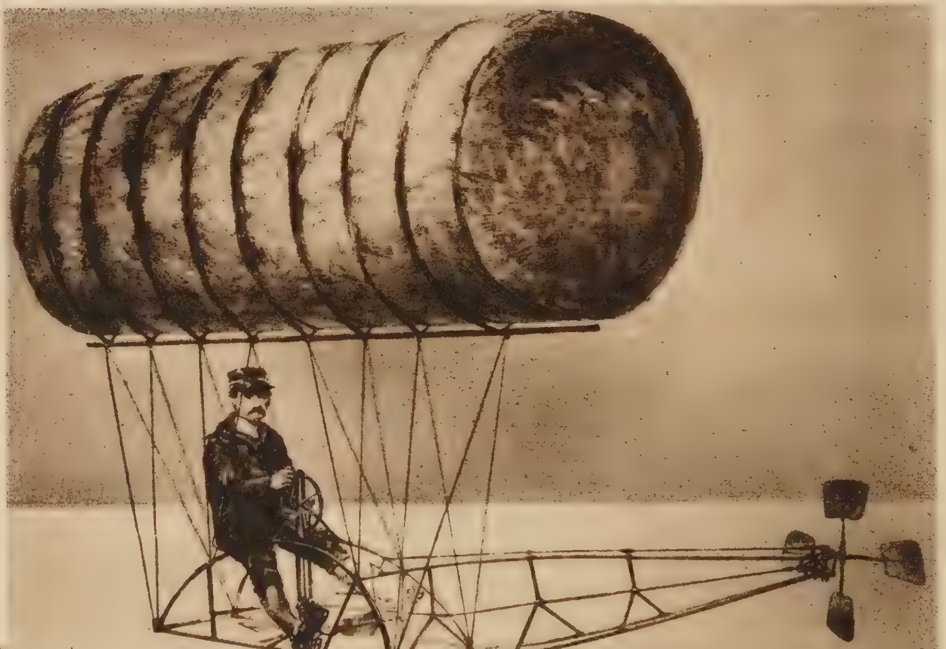
A trailing wire would make possible continuous telegraphic communication with the ship. Trailing guide ropes would prevent the balloons rising over 500 feet. Contemporary engraving (left) in Library of Congress.

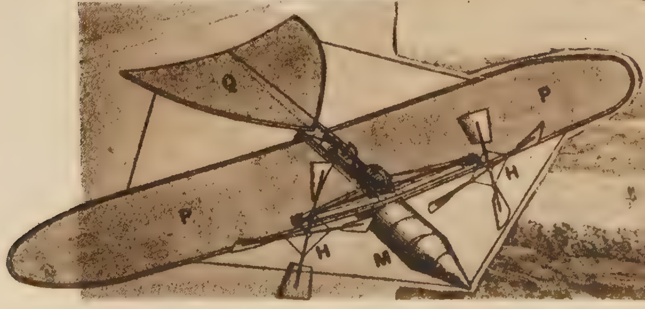
PROFESSOR RITCHELL of Hartford, Connecticut, produced a foot-power dirigible (below) which rose 200 feet in the air on its trial trip (June 12, 1878). It sailed over Hartford and vicinity at the will of the operator for an hour or more, at length returning to where it started. Its fan propeller made 2,800 revolutions a minute. Plate in the Hartford Public Library.

VICTOR TATIN, French engineer, convinced his fellow aeronautical experimenters (1879) of the entire practicability of an "Airplane Flying Machine" capable of carrying a man.

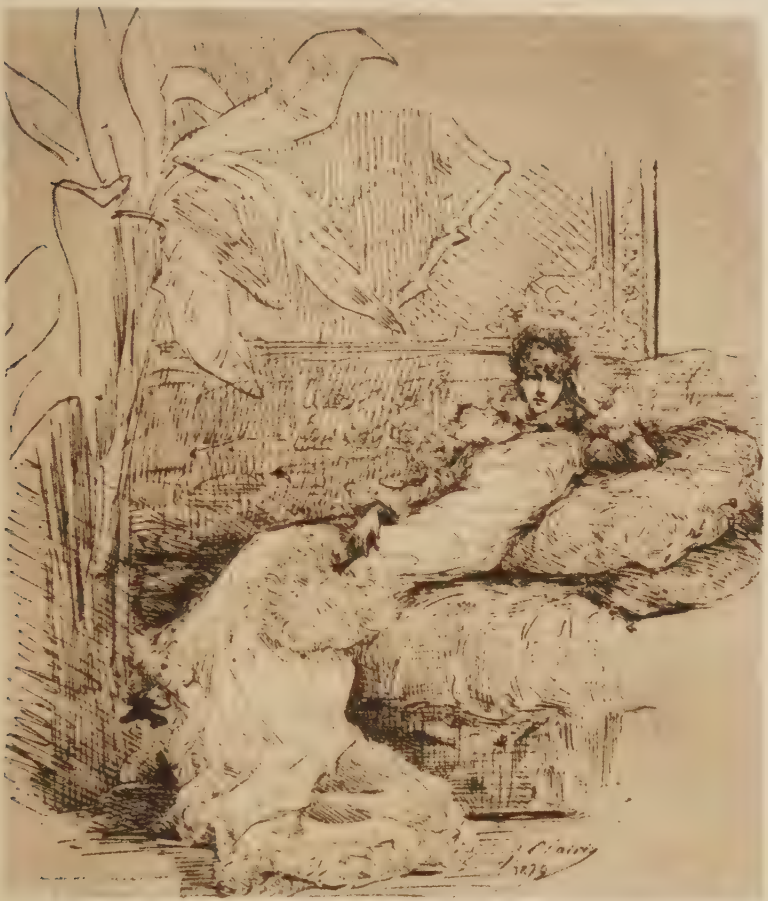
He conducted extensive and successful experiments with a twin screw monoplane model operated by compressed air (below). He had not the money to build a full size machine, and frankly said so, but he won the confidence of French scientists and engineers.

The body of Tatin's airplane was a thin steel tube 4 inches in diameter, 3 feet long, containing the compressed air, which weighed but a pound and a half. The model acquired a speed of 18 miles an hour and rose into the air, to fly 50 feet. Plate (below) in *Aerial Navigation* (Dr. A. F. Zahm).





Great BERNHARDT *Makes Gay* VOYAGE *in* BALLOON—1878



Prints from Bernhardt Collection

BERNHARDT, "the Divine Sarah," greatest French actress of her time, startled France by becoming a devotee of the air. Her first "Balloon Voyage" was made with the famous Louis Godard (1878). Bernhardt resigned as leading actress of the Comedie Francaise because the manager, Perrin, scolded and fined her for this balloon voyage with Godard and her friend, Georges Clairin, the distinguished artist. M. Turquet, Minister of Fine Arts, interposed and caused the fine to be remitted, and Bernhardt recalled her written resignation.

The three celebrities ascended late in the afternoon in Godard's beautiful orange-colored balloon, "*Dona Sol.*" The irate Perrin was crossing the Pont de Saints-Peres, when he met a friend who called out: "Look up at the sky! There is your star shooting away." "Who is in that balloon?" cried Perrin. "Sarah Barnhardt!" answered the friend. "That's another of her freaks. She shall pay for this!" shouted her angry impresario.

Bernhardt's highest altitude was 2,600 feet. They had a "copious dinner with champagne." Finally, however, Sarah grew cold and her nose bled slightly. At Godard's suggestion, she pulled the cord which opened the gas valve. They came down at Vachere. The owner of a neighboring chateau loaned them a carriage in which to drive to the railway station at Emerainville.

Home at midnight, Bernhardt was told of Perrin's frantic messages. Next day, he lectured her and fined her 1,000 francs for traveling without the consent of the management. Bernhardt laughed at him.

"Outside the theater, Perrin," she flamed, "I do as I please. Besides, you bore me to death. I shall resign. Be happy!"

The Bernhardt portrait (right) is by Sarony (1880). The sketch of the renowned actress (above) is by her friend Georges Clairin (1789).

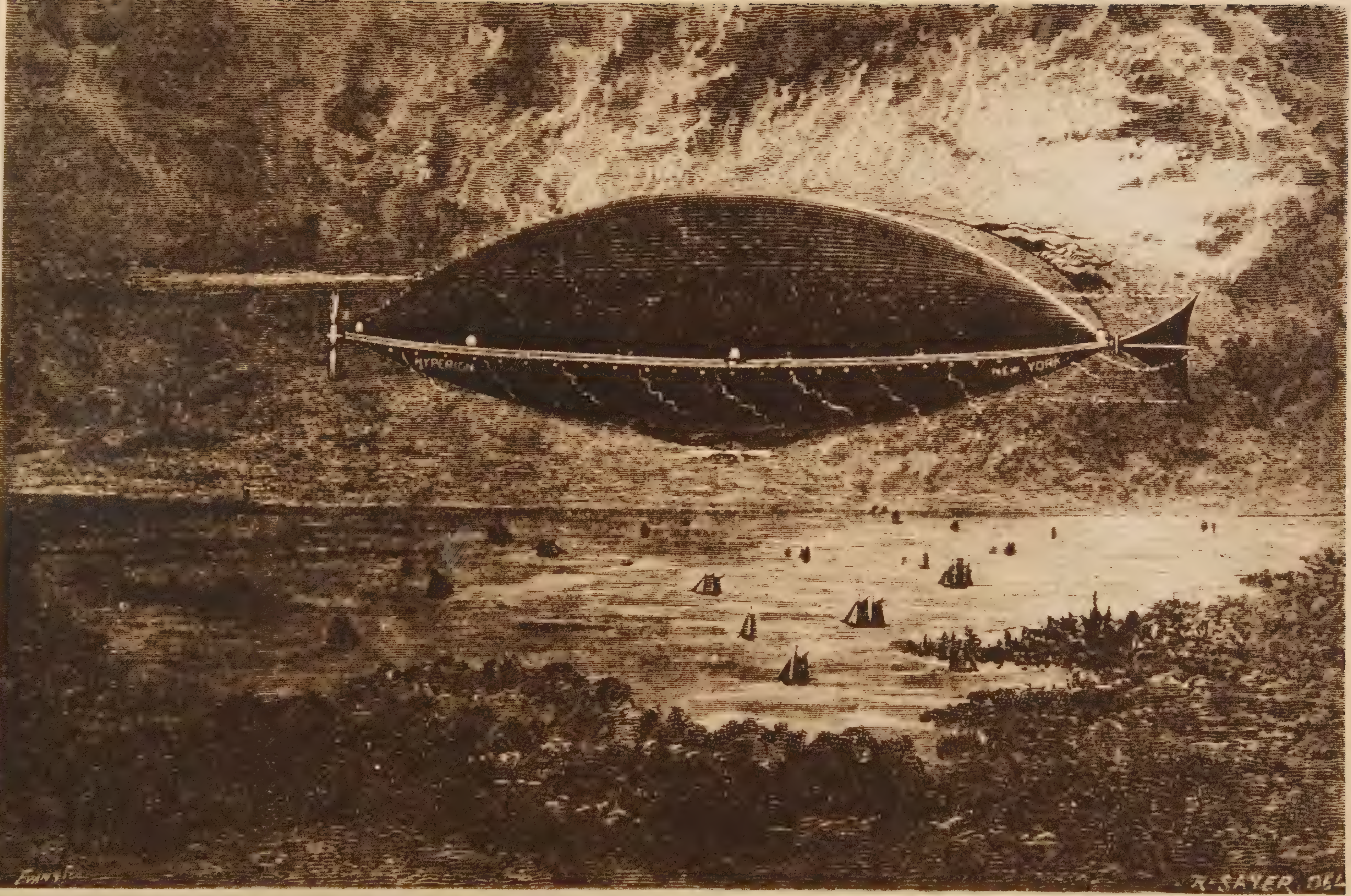
"The Divine Sarah" was the friend of the leading aeronauts of her day—Giffard, the Godards, Tissandier and others.

During the Franco-Prussian War, while in charge of a hospital, Bernhardt encouraged a balloon inventor till she found him planning to make war from the air—then sent him away instantly (1870).

Henri Giffard had a great captive balloon in which Bernhardt frequently ascended. One day she said to Giffard, "How I should love to go up in a free balloon!"

"Any day you like," replied the gallant Giffard.

Tissandier was to go along, to Sarah's delight, but she refused to allow Jerome Napoleon ("Plon-Plon") to join the aerial party because "his conversation bores me." Tissandier met with an accident. Giffard couldn't go, and it was Godard who finally took up Bernhardt on her first aerial journey.


HYPERION
NEW YORK
R. SAYER DEL

"HYPERION" *for* FLIGHT *Across* ATLANTIC OCEAN—1879

PROJECT *of* EDMUND CLARENCE STEDMAN, *Banker-Poet*

DR. STEDMAN (1833-1908), New York banker-poet and scientist, proposed (1879) a rigid airship which had many similarities to today's Zeppelin—which could "Fly Around the World." He coined for it the word "Aerobat"—converse of aerostat—and, later, "Aeronon."

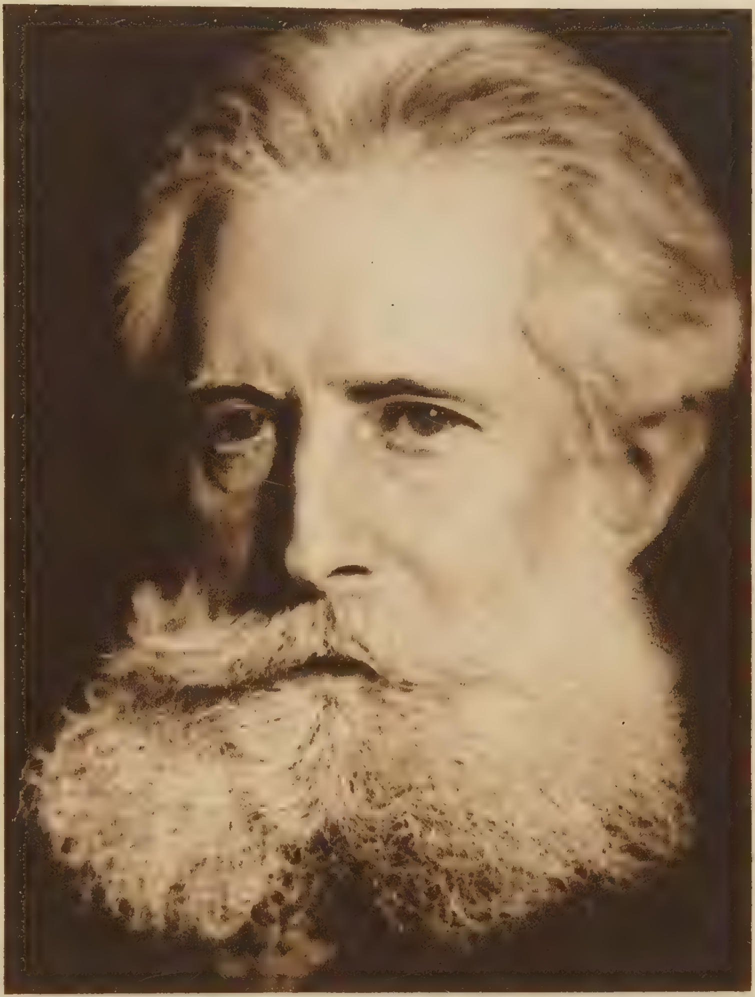
He declared it to be "an air traveler, a structure that can be guided upon a level, and can range the atmosphere at the voyager's will." He challenged science to "Take a hint from the fish and contrive some means of rising and falling without loss of ballast and ascensive powers."

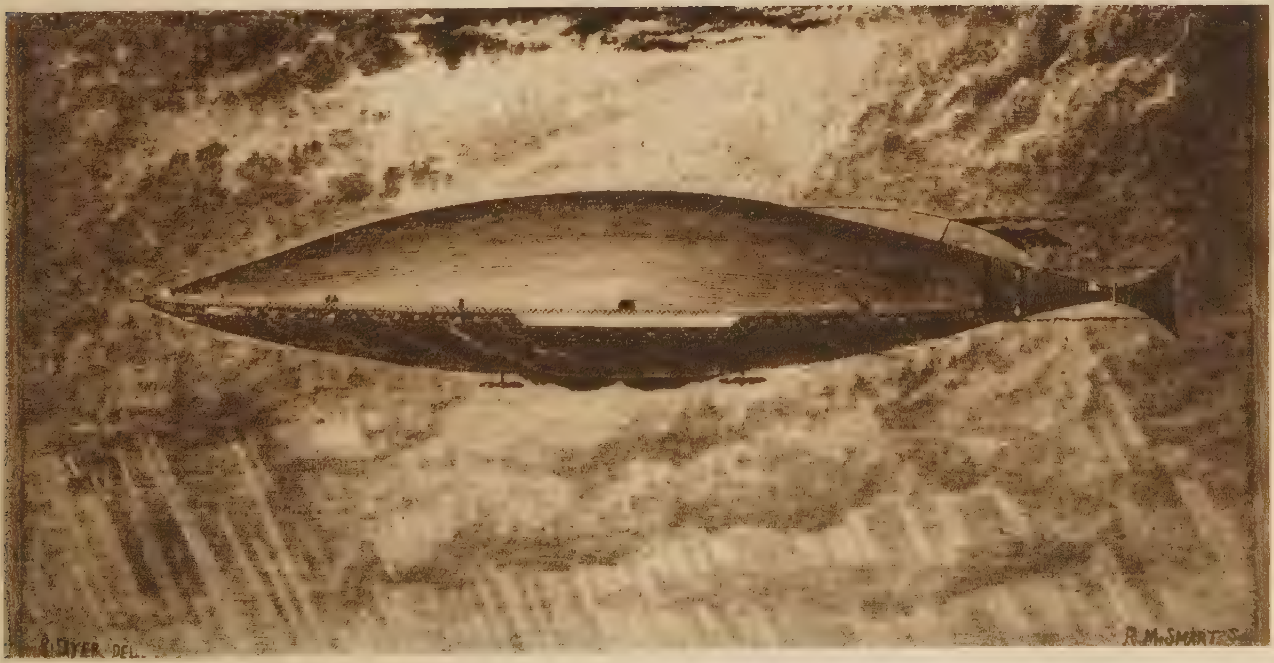
Stedman designed fish-formed airships to solve the problem—propelled first by tractor screw at the bow and in a later design by twin screws beneath and with a rudder astern. The framework was to be of steel, brass or copper tubing and a gas-containing envelope was to lie within the outer covering—which Dr. Stedman believed would ultimately be of metal.

Aluminum, he recorded, was too costly then, but "there are signs that it yet will be produced so cheaply as to be useful for much of the framework of our structure. . . . Possibly, a non-explosive gas of equal lightness to hydrogen will be discovered."

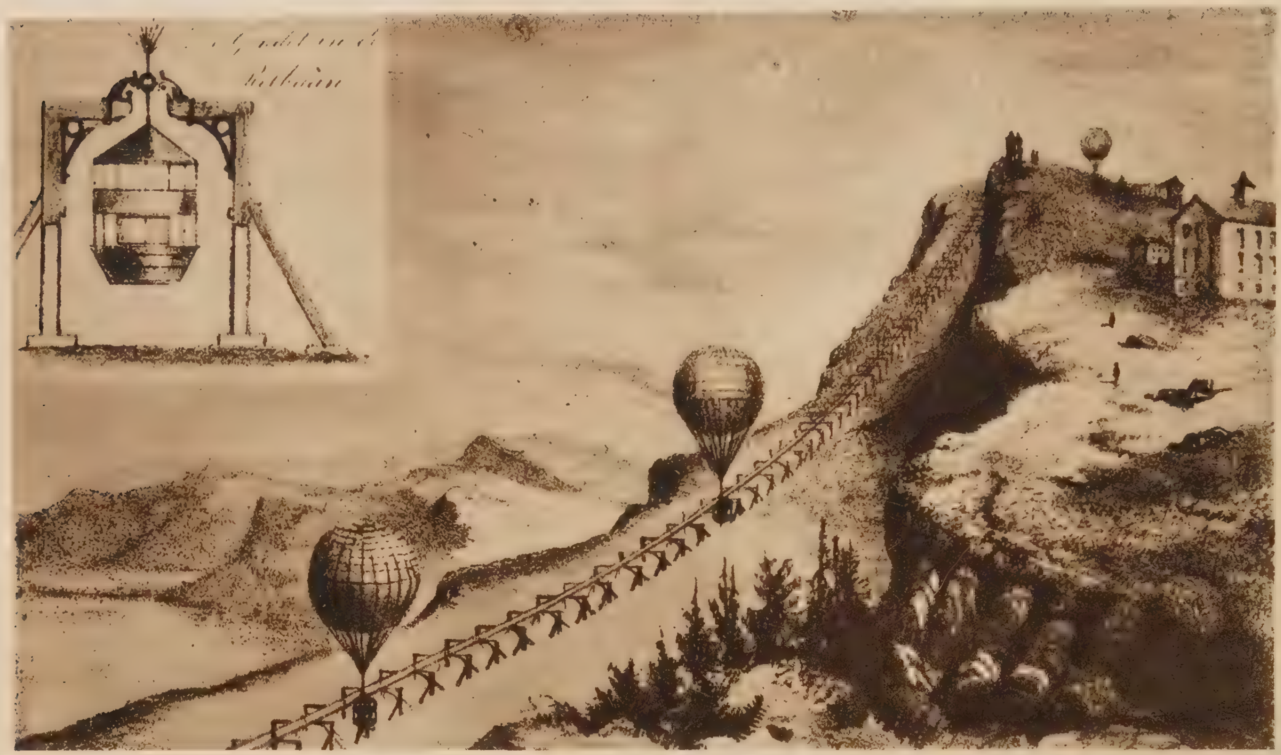
Fifty years and more this airship was in Dr. Stedman's far-seeing mind. He often discussed it at the Lotos Club and frequently wrote about it. He believed his airship could easily fly the oceans and around the world.

Old plates (left and below) are drawn from Dr. Stedman's own sketches. Stedman Portrait in the famous Collection of Pirie Macdonald (Copyrighted).




DYER DEL.
R. M. SMART Sc.

Engineers PLAN AERO RAILWAY *to* CLIMB *the* ALPS—1880

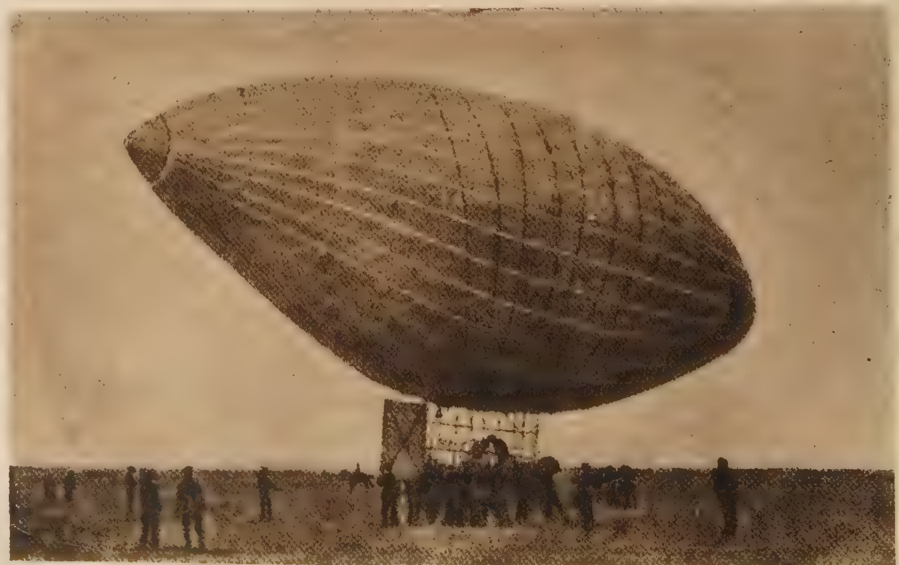


FIRST ATTEMPT AT A BALLOON RAILWAY. This was the ingenious project of German engineers, who planned (1880) a transportation line to carry passengers up the steep slopes of Mount Rigi in Switzerland. The unique balloon tramway (above) was to have a double-deck car suspended beneath a rail-line running up the mountain. Above the rail would be fastened to each car the gas-filled balloon upon whose ascensive power depended the movement of the car to the mountain top.

The Aero Railway was to travel high above the waters of Lake Lucerne to the rugged crest of Mount Rigi—to provide a means of getting from Vitznau, on the northern shore of the lake up to the summit of the mountain, which towers above the town. Stipple print in Bella C. Landauer Collection.

HANS WOLFERT, German engineer built the cigar-shaped dirigible balloon (below). He believed the benzine engine of Daimler offered the solution for a power plant in an airship. His was the first benzine-motored airship to be tried-out (1880). Its first ascension was at Leipsic, but the load had been improperly distributed and the vessel reared on one end and quickly collapsed. A later trial at Templehofer Field in Berlin ended in disaster; the benzine vapor ignited and fired the balloon, which fell blazing to earth. Wolfert and his assistant were killed.

Wolfert's German
Benzine-Motored
Dirigible Balloon
First in the World
Equipped with
Benzine Power (right).
Successful at first,
the Wolfert Airship
Was Finally Burned
and Its Designer Killed
Through Ignition of
the Benzine Fuel.



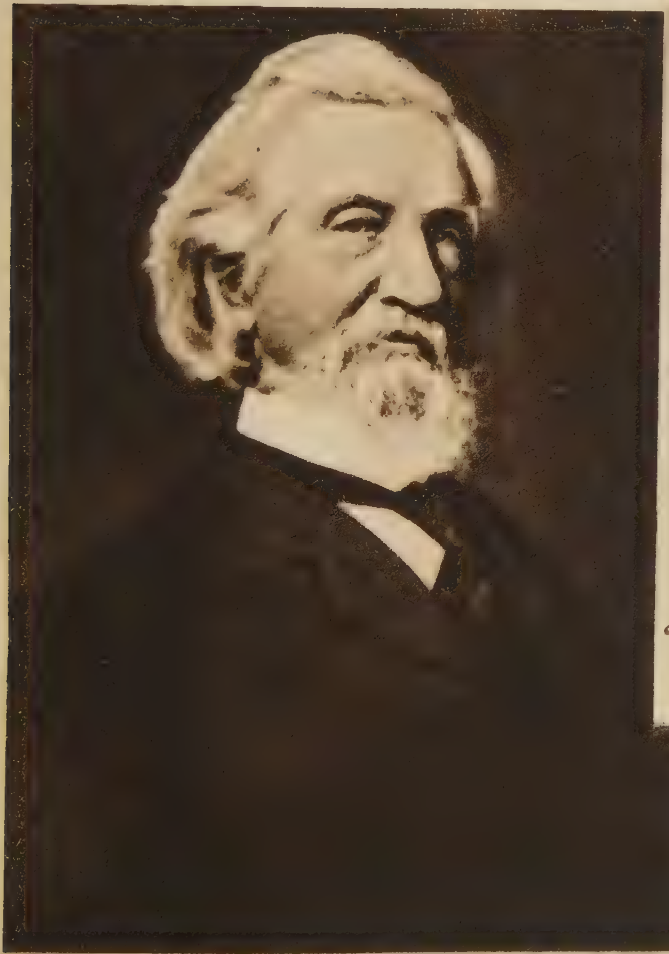
DARIUS GREEN *Makes Predictions that* COME TRUE—1880

JOHN T. TROWBRIDGE (1827-1916), distinguished New England poet and fiction writer, made a remarkable impression with his poem, *Darius Green and His Flying Machine* (1880).

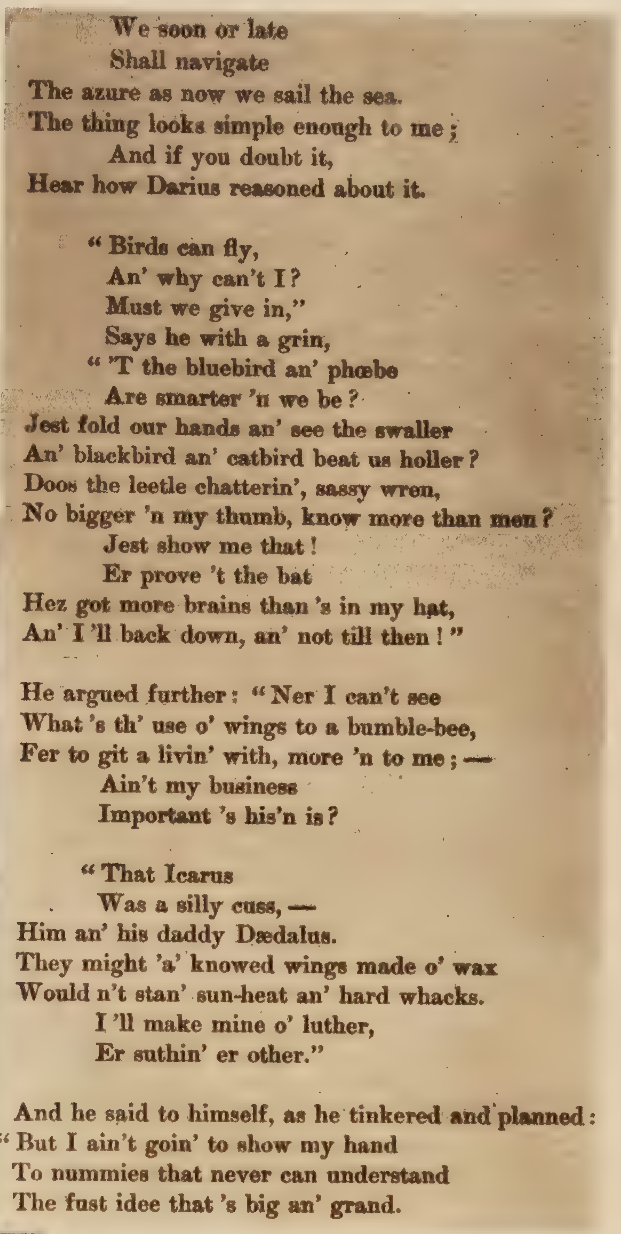
Interest in aeronautics in America had become intense, but the popular belief was that the balloon was "the thing"—and the flying machine an impractical idea. This poem swept over the country like wildfire. It was reprinted far and wide; it got into McGuffey's Readers and other school books, and was even translated into foreign languages.

Darius believed he could invent a machine that would fly. He was one of six Green boys—Reuben, Burke, Nathan, Jotham and Solomon being the others. Darius, as is plain in the excerpt from the poem (right), attempted to prove his genius. He stayed at home from a Fourth of July celebration and planned to astonish the natives by flying over the crowds on the village green.

But his home-made wings failed him—and he landed in the barnyard—to be taunted by the laughter of his brothers, who had remained hidden in the barn to watch the event.



John Townsend Trowbridge



We soon or late
Shall navigate
The azure as now we sail the sea.
The thing looks simple enough to me;
And if you doubt it,
Hear how Darius reasoned about it.

"Birds can fly,
An' why can't I?
Must we give in,"
Says he with a grin,
"'T the bluebird an' phœbe
Are smarter 'n we be?
Jest fold our hands an' see the swaller
An' blackbird an' catbird beat us holler?
Doos the leetle chatterin', sassy wren,
No bigger 'n my thumb, know more than men?
Jest show me that!
Er prove 't the bat
Hez got more brains than 's in my hat,
An' I 'll back down, an' not till then!"

He argued further: "Ner I can't see
What 's th' use o' wings to a bumble-bee,
Fer to git a livin' with, more 'n to me;—
Ain't my business
Important 's his'n is?

"That Icarus
Was a silly cuss,—
Him an' his daddy Dædalus.
They might 'a' knowed wings made o' wax
Would n't stan' sun-heat an' hard whacks.
I 'll make mine o' luther,
Er suthin' er other."

And he said to himself, as he tinkered and planned:
"But I ain't goin' to show my hand
To nummies that never can understand
The fust idee that 's big an' grand.

Darius Green was the fictional Icarus of modern times. His brothers rushed out among the fluttering chickens and geese to find him feeling himself over gingerly and ruefully rubbing his bruises. "How do you like flying?" they cried. "Wal," replied Daris, "I like flyin' well enough. But *the' ain't sich a thunderin' sight o' fun in 't when ye come t' light!*"

The name of Darius Green became a part of the English language as the phrase for any "crack-brain who believed he could fly and tried to do it." For thirty years after the poem first appeared—until the airplane was well established—every flying machine experimenter was a "Darius Green." Facsimile (above) from the first edition of Trowbridge's poems. Portrait (left) from his autobiography.

EDISON *Turns* HIS GENIUS *to* CONQUEST *of the* AIR—1880

THOMAS ALVA EDISON was the first of the great American inventors to apply his genius to the problem of the Flying Machine (1880).

We record his own statement: "James Gordon Bennett gave me $1,000 to make experiments in the direction of flying. I constructed a helicopter, but I couldn't get it light enough. I used stock-ticker paper made into guncotton and fed the paper into the cylinder of the engine and exploded it with a spark.

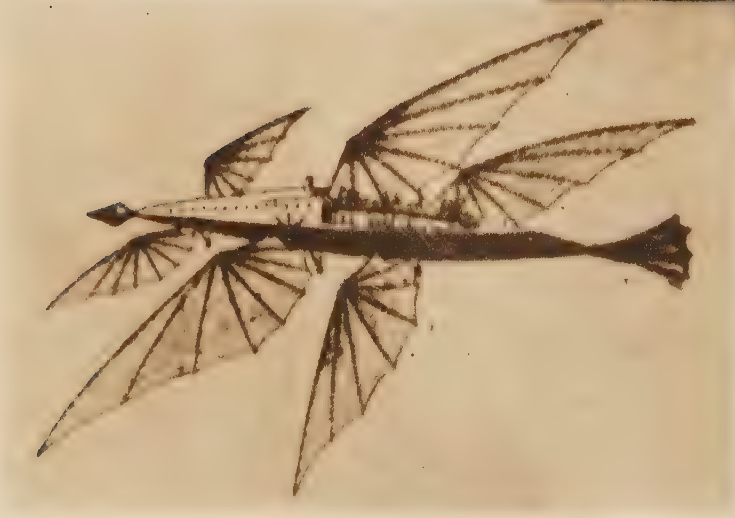
"I got good results, but burned one of my men pretty badly and burned off some of my own hair, and didn't get much further. But I knew then it was only a matter of experimenting, and I reported to Mr. Bennett that when an engine could be made that would weigh only three or four pounds to the horsepower, the helicopter would be a success. I believed it to be the best method and the most likely to be commercially successful. I have not changed my mind, but I have had to wait a long time."

Edison demonstrated that plane surfaces propelled through the air rapidly would rise and sustain weight. The difficulty was to get an engine, so light in proportion to the power it would deliver, that it would supply practical power plant for a Flying Machine. Such an engine did not exist then—and Edison turned his genius to fields of investigation more likely to give immediate results.

Portrait of Edison (right) by Newsboy Studio, New York (1880).

Prints from the

Edison Collection



"Edison's Flying Ship to tour the World" (left) was widely heralded throughout Europe. This print appeared in Paris (1880). It was drawn by Dieuaide, French engineer, patent attorney, and secretary of the French Aeronautical Society.

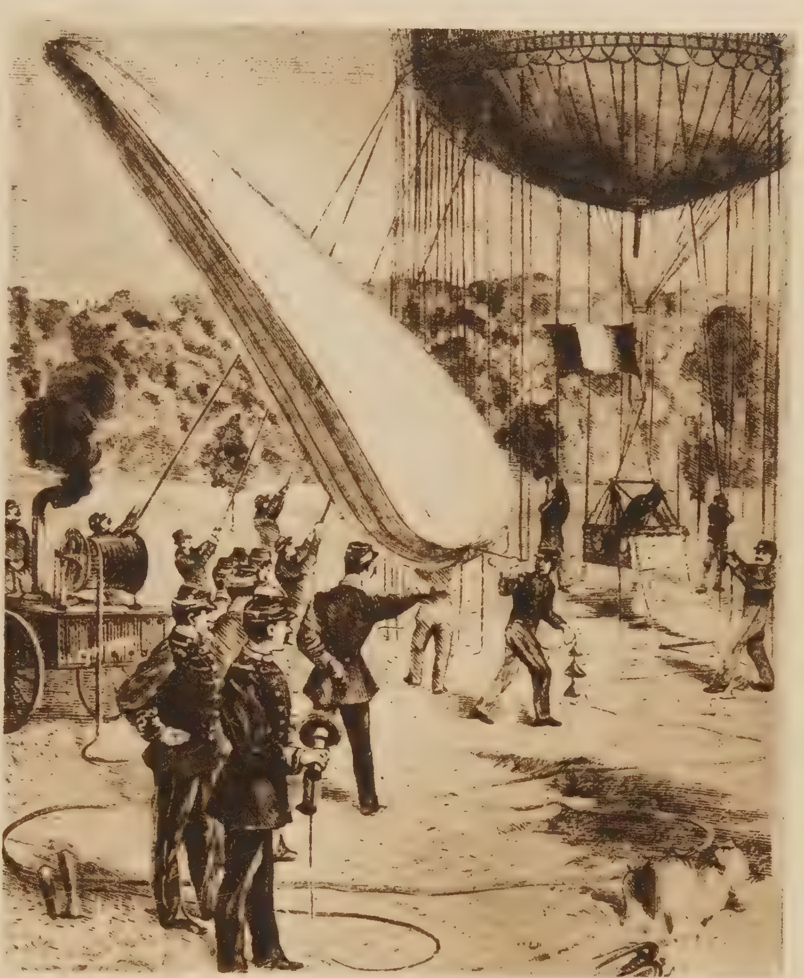
Mr. Edison informs us that his experiments did not reach the stage of construction. M. Dieuaide had himself designed a heavier-than-air flying device before Edison became interested in the subject, and was keenly concerned in what the American scientist was doing. He undoubtedly made this design of the "Edison Flying Ship to Tour the World" on the theory of Edison's aeronautic principles.

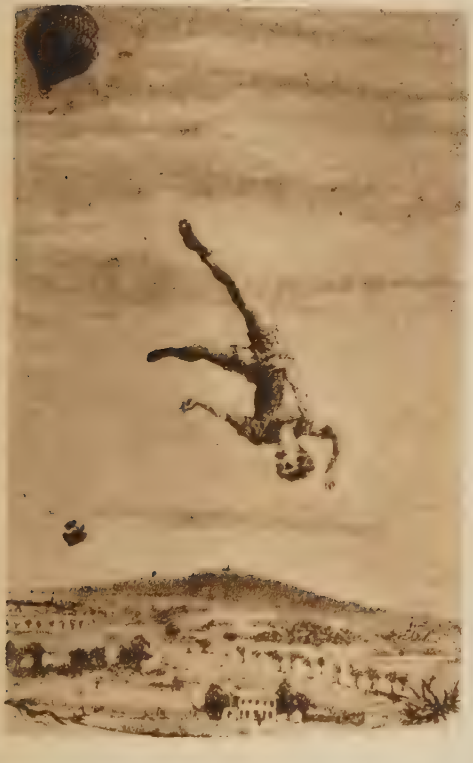
First TELEPHONE *Communication from the* AIR—1882

ALEXANDER GRAHAM BELL was successful in transmitting the first sentence by telephone (1876); five years later the French were hard at work utilizing the telephone in connection with their military aeronautics at Chalais-Meudon, near Paris, which for nearly a century had been headquarters of the French army air service. Bell, himself, was later to direct his genius toward aeronautics.

Old engraving (right) shows a French military balloon carrying a telephone instrument set, with a trailing telephone wire to the officer on the ground, who will talk to the observer in the air. Just as France led the way in military ballooning, so she did in the military use of the telephone.

Note that the reel car which handles the balloon's control line is operated by a steam engine in place of being drawn by horses—this is fifteen or twenty years before the automobile came into existence. Print in the Library of Congress.

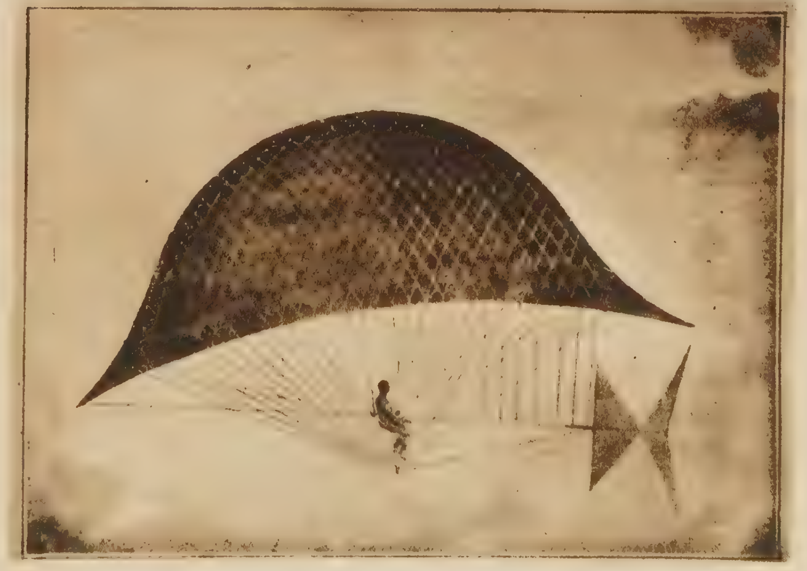




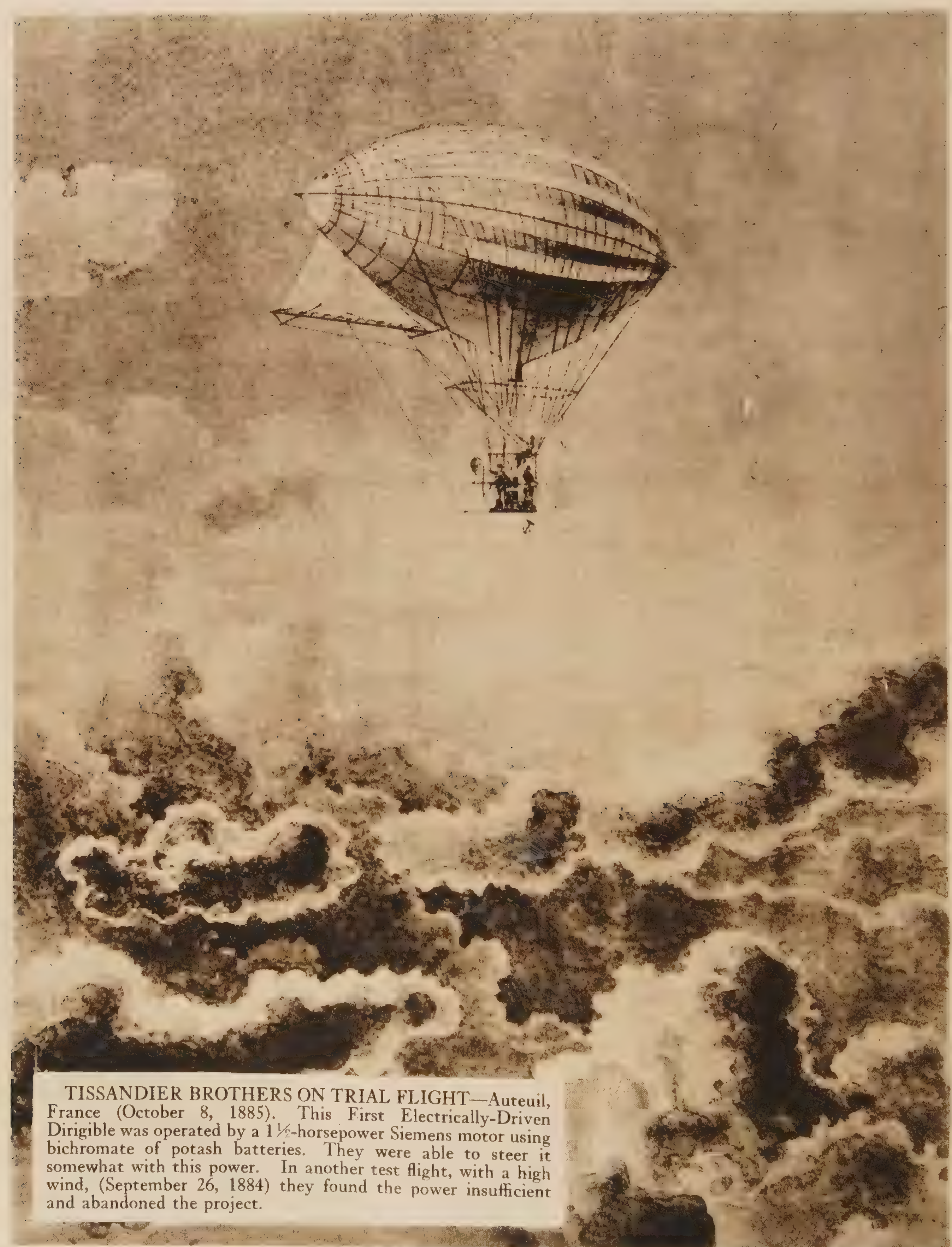
FALLING FROM CLOUDS—One of the first French acrobats to make use of the balloon to carry a trapeze into the sky, lost his life at Courbevoie (1881). Through a slip which cost him his hold on the trapeze bar, he was hurled headlong to his death a thousand feet below.

Old print (left) in the Collection of Bella C. Landauer.

FIRST SKY-CYCLE (below)—Carl E. Myers was a leading figure in American aeronautics for a generation. He brought out his first "Skycycle" (1881) and flew it in many parts of the United States. It was an odd-shaped dirigible gas balloon with a screw propeller. Myers combined both hand and foot-power propulsion for this weird apparatus.

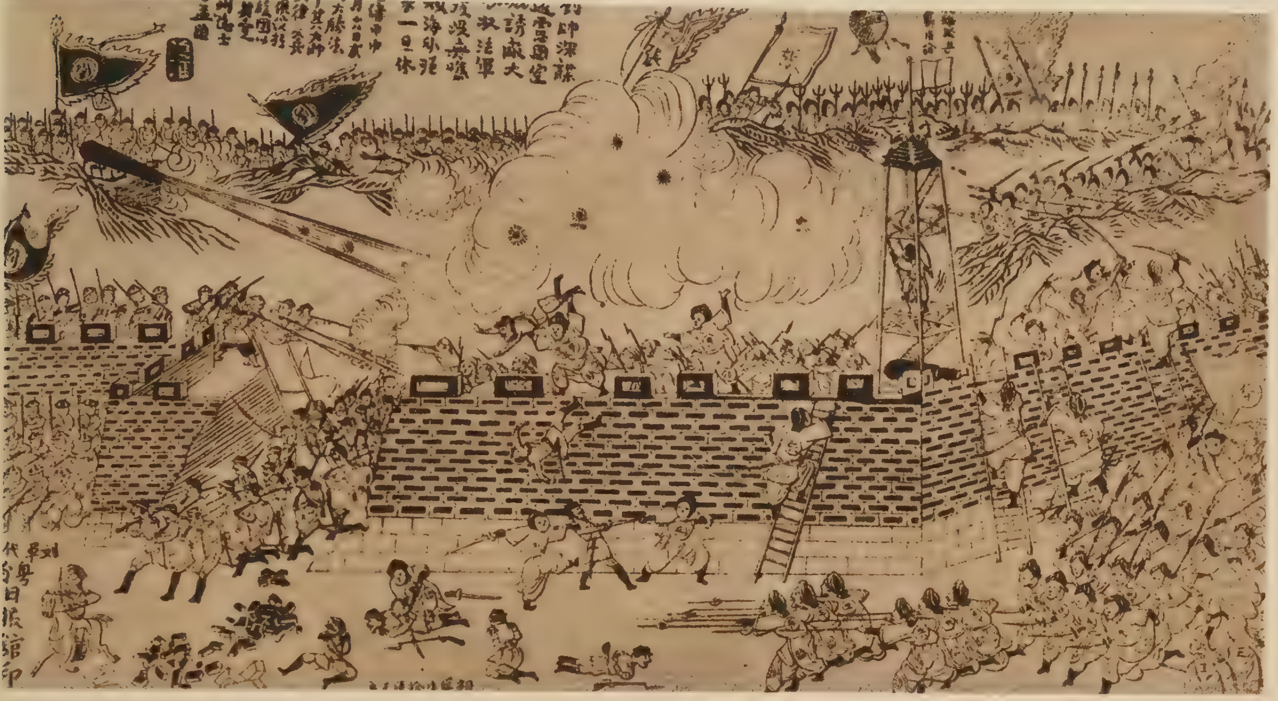


First DIRIGIBLE *to be* DRIVEN *by* ELECTRICITY—1883



TISSANDIER BROTHERS ON TRIAL FLIGHT—Auteuil, France (October 8, 1885). This First Electrically-Driven Dirigible was operated by a 1½-horsepower Siemens motor using bichromate of potash batteries. They were able to steer it somewhat with this power. In another test flight, with a high wind, (September 26, 1884) they found the power insufficient and abandoned the project.

WAR BALLOONS *in* CHINA *and the* FAR EAST—1884



WAR BALLOONS, established in Europe in the first Napoleonic Wars, now appear in the Far East—brought to China by the French for use in Franco-Chinese Warfare (1883-1885).

We find a French section of four balloons in service in Tongking (Tonkin) and actively engaged in the Battle of Hoang-Ho.

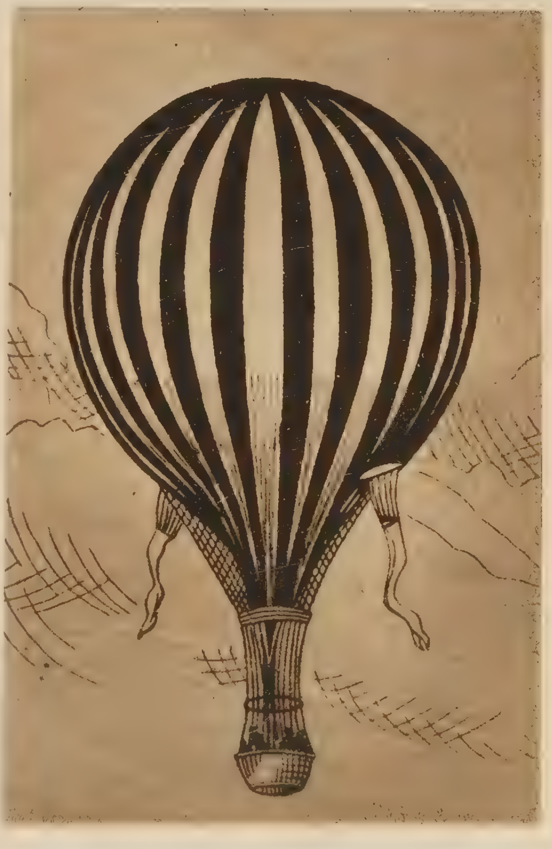
Since the early centuries, when China was familiar with balloons in peace and war, they have long passed into disuse and been forgotten. Now the French are extending their authority over Indo-China. In Tongking Province, especially there is desperate resistance. The Chinese Empire lends aid and the Chinese regulars fight alongside Annamese troops to enable walled cities like Son-Tay to hold out against the French General Bouet.

Son-Tay eventually falls. Li Hung Chang agrees with the French to withdraw the Chinese troops (May, 1884), and later the French protectorate over Annam and Tongking is confirmed in a second treaty. This did not stop hostilities, however—nor were the Chinese troops withdrawn—and there was spirited fighting for more than a year afterward. Finally (June, 1885) the Irish-Chinese statesman, Sir Robert Hart, negotiated peace with China.

We present herewith a literal translation of the official record of the Pekin journal *Tze-lin Hou-pao* (March 22, 1884): "The French have brought to Annam, to aid them during the military operations, balloons of which we give a reproduction, and which exhibit the greatest usefulness. In the war formerly waged between France and Germany both nations possessed them—endeavoring to comply with the word of Confucius that 'he who would make a perfect work first sharpens his tools.' All other engines of warfare invented by the Westerners the Chinese now have—but we have no balloons as yet. Many of our compatriots do not even know what balloons are, which is the reason why we have represented one here for our readers."

The Chinese print (above) shows the French War Balloon during the defeat of French troops before a Tongking fortress. The French balloon (right) is reproduced from the Official Chinese record—*Tze-lin Hou-pao*.

Old Chinese Prints



OTTO LILIENTHAL—GERMAN ENGINEER-SCIENTIST AND PIONEER OF GLIDING FLIGHT (1848-1896)
(From a Portrait in Possession of the Lilienthal Family)

PART III

SCIENCE SOLVING PROBLEM *of the* AGES

ENGLAND—FRANCE—GERMANY—AMERICA *Develop New* PRINCIPLES

THE LAST DECADE before the Great Discovery finds the scientists of many nations within reach of the solution to the age-long search. England, France, Germany, Italy, and America are developing new principles. The race down the centuries is nearly won. Which nation is to be the victor?

Railroads are spanning the Continents; the steamship is mastering the oceans; the "Motor Age" and the "Wireless Age" at this time are on the threshold—with the "Aerial Age" fast following.

In the year that the Canadian Pacific Railroad is opened (1885), while the first electric street railway is starting operation in the United States, Renard and Krebs are giving trial flights of their dirigible airship in France; Hargrave is experimenting with model flying machines in Australia and the second Aeronautical Exhibition is taking place in London.

The Statue of Liberty—the gift of the French Nation to America—is unveiled in the harbor of New York in the presence of 1,000,000 people (1886); more than 900,000 perish in the great flood in Hoang-Ho River in China (1887); the great blizzard sweeps the eastern United States (1888); Brazil becomes a republic; and the World's Fair is held at Paris with its Aeronautical Exposition.

The Royal Engineers organize the "Balloon Section" for military experiments in England (1890). Chanute records the "*Progress in Flying Machines*" in America (1891), while Langley reports his "*Experiments in Aerodynamics*" in Washington; Lilienthal develops the glider in Germany; and Ader begins to build his flying machine in France.

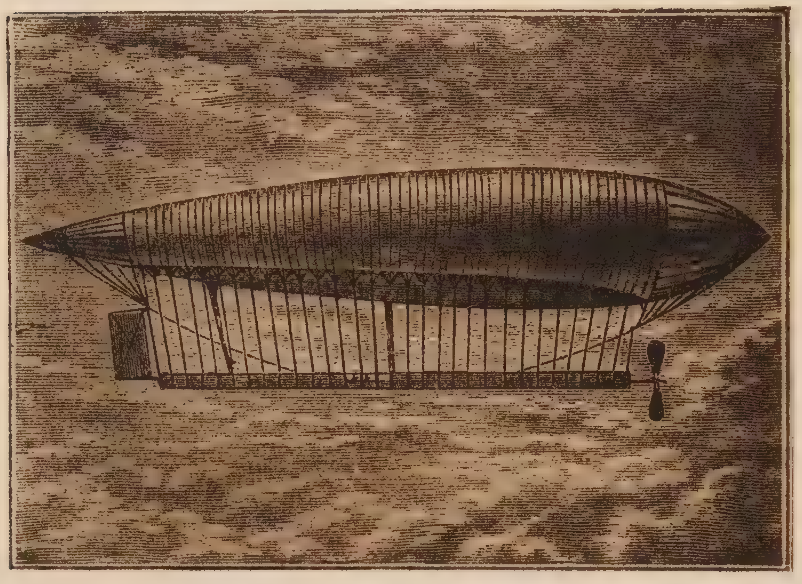
The World's Fair (Columbian Exposition) opens in Chicago (1893) in commemoration of the 400th anniversary of the Discovery of America, and Edison invents the motion picture machine, while Phillip's multiplane is on trial in England and Sir Hiram Maxim is testing his steam multiplane.

The Chinese-Japanese War breaks out (1894); Hawaii is made a republic; the Dreyfus trial is disturbing France; and the first gasoline vehicle makes its appearance in the United States; Powell experiments with manlifting kites in England; and Chanute continues his investigations into aeronautical engineering in America.

Lilienthal makes a record of 2,000 successful glider flights in Germany (1895), while Roentgen discovers the Roentgen Ray; Pilcher develops the glider in England; the Cuban Revolution for Independence begins; and wireless telegraphy (low frequency) is discovered by Preece in England; to be followed by Marconi's great discovery of Wireless (high frequency) in Italy. Langley, American scientist, lays the foundation for the New Age with his power-driven "Aerodrome" (1896) and Lilienthal is killed in glider flights in Germany.

During this period, Wilhelm II is crowned Emperor of Germany with little realization that during his reign—a quarter century later—he is to become the central figure in a World War in which "War in the Air" is to be one of the decisive factors. The German Republic, founded on the ruins of empire, is to become one of the foremost nations in the New Age of Aerial Navigation.

FRANCE *Produces World's First* MILITARY AIRSHIP—1885



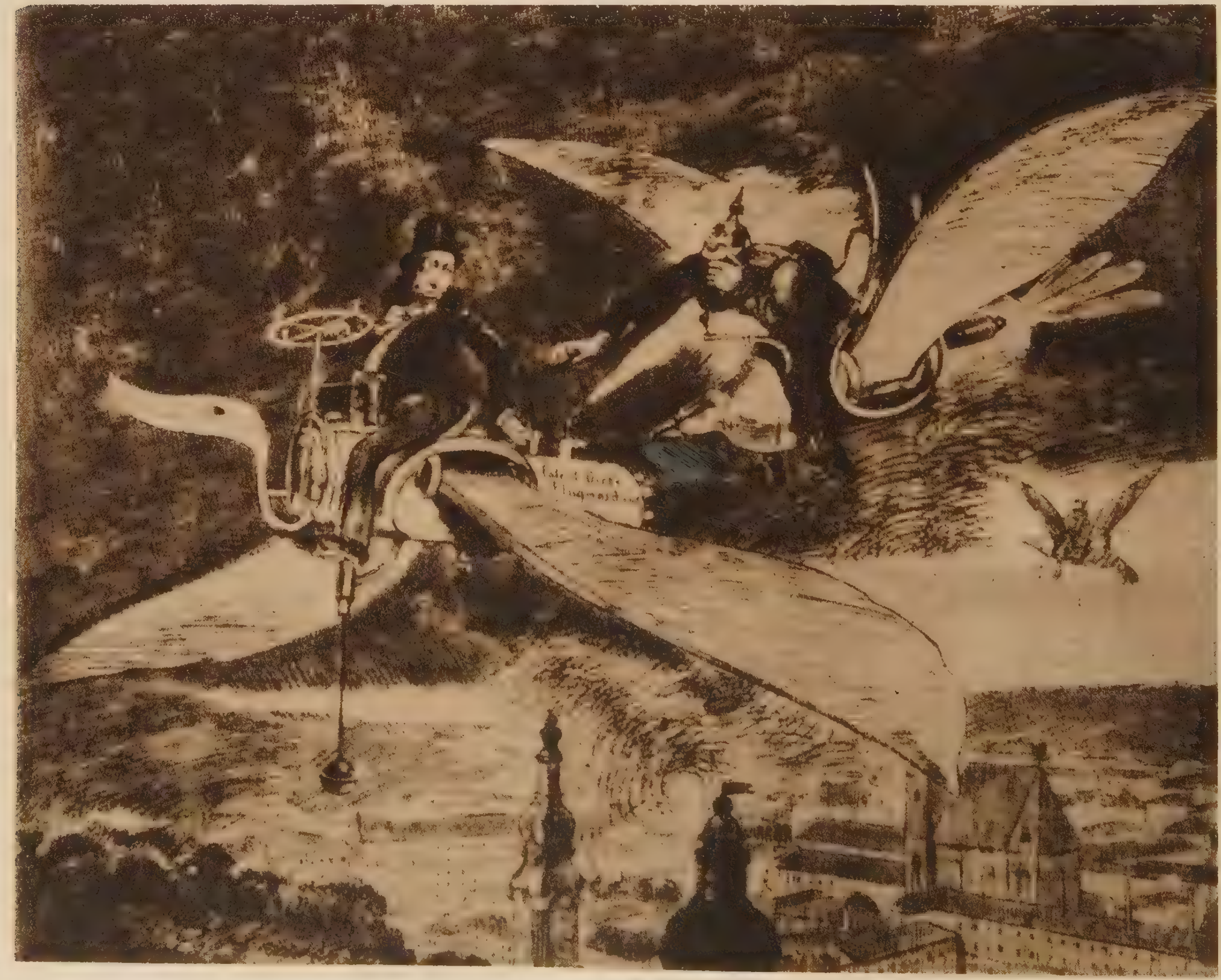
RENARD AND KREBS, French Army engineers, were the first men in history to take a dirigible balloon into the air and maneuver it so as to return to their starting point against the wind (1884).

On the following year they flew a figure eight and navigated their "Elegant Airship, La France," from Chalais-Meudon to Paris and return in the "First Cross-Country Airship Flight," at an average speed of 14½ miles an hour.

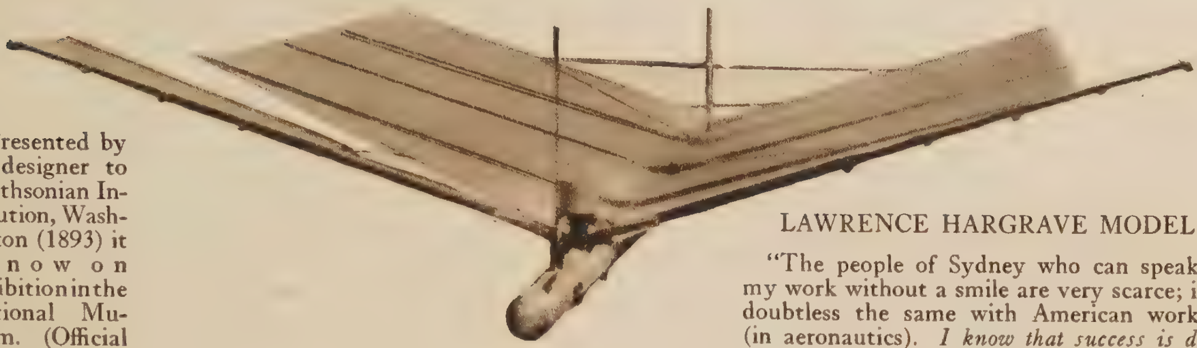
Captain Charles Renard was commandant of the military balloon establishment of the French Army at Chalais-Meudon and Captain A. C. Krebs was his assistant. Their ship, "La France," was the "World's First Military Airship."

It was constructed with a Government appropriation of 40,000 francs obtained through Premier Gambetta. Its tapering torpedo form was original with these two officers, who equipped their ship with an 8½-horsepower electric motor driven with chromium chloride batteries. It had a very large propeller, 23 feet in diameter. Print in the Collection of Dr. A. F. Zahm.

AERIAL POLICE CAPTURE OFFICIAL ABSCONDING BY AIR
Imaginative German print (1885) in the Prussian State Library. (Below)



AUSTRALIA *Experiments with Model* FLYING MACHINE—1890



Presented by its designer to Smithsonian Institution, Washington (1893) it is now on exhibition in the National Museum. (Official Photograph).

LAWRENCE HARGRAVE MODEL

"The people of Sydney who can speak of my work without a smile are very scarce; it is doubtless the same with American workers (in aeronautics). *I know that success is dead sure to come, and therefore do not waste time and words in trying to convince unbelievers.*"

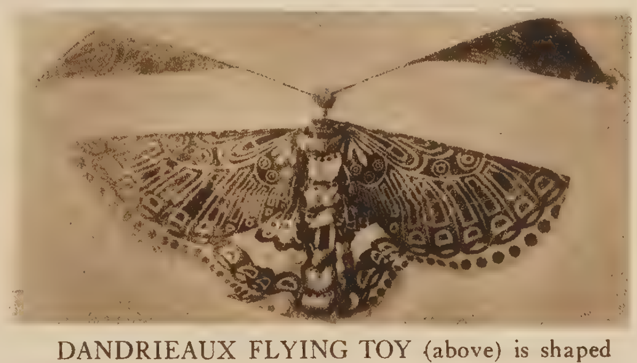
HARGRAVE of Sydney, Australia, produced the first practical flapping-winged monoplane model (1890)—two hundred years after Borelli first promulgated the principle of human flight by flapping wings (1680). Hargrave produced the improved compressed air monoplane model (above). His Model No. 10 flew 368 feet (1890), an utterly unprecedented distance; and his Model No. 13 (1891) flew 128 feet in 8 seconds.

Hargrave had been experimenting with flapping-wing models for several years. He first powered them with twisted rubber bands to rotate their tiny propellers and then by a little compressed air motor with a 1½-inch cylinder.

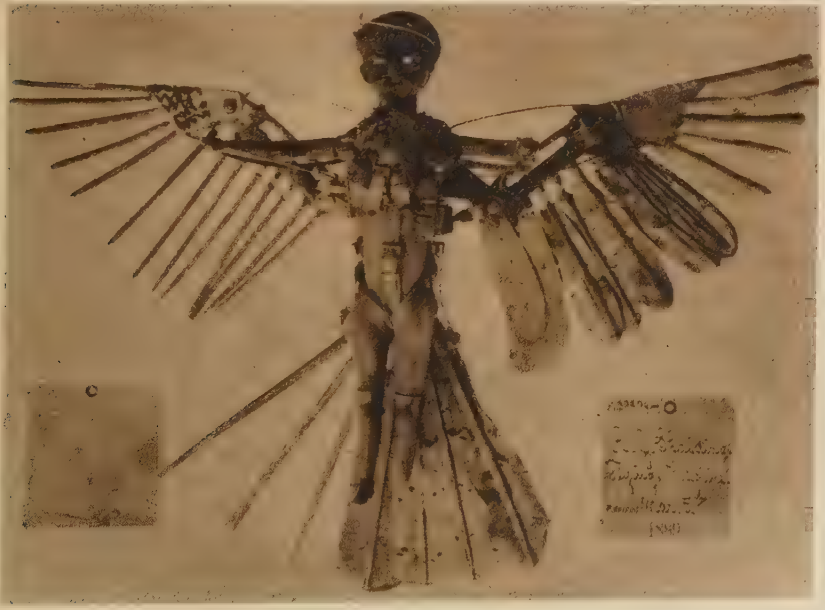
Altogether, Hargrave built and flew seventeen model monoplanes. His experiments were soundly based and conscientiously carried out, and he reported their results faithfully as a member of the Royal Society of New South Wales. He attended America's First International Conference on Aerial Navigation at the Chicago World's Fair (1893) and there read a historic paper on his work.

Aviation has since discarded the flapping wing for the fixed wing, with ailerons. Because he could not get an engine light enough with sufficient power to drive a large airplane built on his design, Hargrave abandoned flapping wings for the Hargrave box kite (late in 1893), with which he made successful gliding flights and which, with a gasoline motor, later became the recognized model for the first French airplanes.

"The flying machine of the future," said Hargrave, "will not be born fully fledged and capable of a flight for 1,000 miles or so. Like everything else, it must be evolved



DANDRIEAUX FLYING TOY (above) is shaped like a butterfly and its two-winged propeller is operated by a rubber band. This was one of the devices which kept alive the spirit of aviation in France during dark days of discouragement (1879 on). It is one of several brought from France by Dr. S. P. Langley (1891).

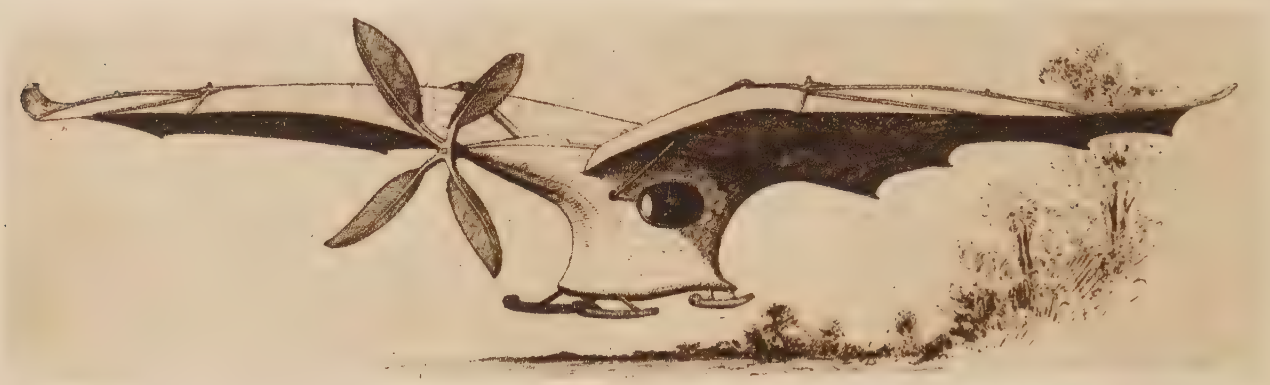


Official Exhibits

FLYING CONTRIVANCE (left)—R. J. Spalding received United States Patent 398,984 (March 5, 1889) for this astonishing mechanism made of leather, canvas wood and steel. It is a flapping-wing affair intended as an improvement on Leonardo da Vinci (1490) and others who came after. There is no record that it ever was constructed in adult size or that an attempt was made to fly with it.

Of the millions of patents issued by the United States Government since the establishment of the Patent Office (1836), thousands have been on flying devices of many and varied kinds. Even after an airplane had actually flown, however, flying machine patents were looked on with scant consideration in the United States Patent Office.

ADER *Begins to Build* FLYING MACHINE *in* FRANCE—1890



ADER'S FIRST AIRPLANE—THE "EOLE"—Sketched from a distance for *L'Illustration*, (June 20, 1891).

CLEMENT F. ADER (1841-1925), French electrical engineer and inventor of a telephone, came close to being the first man to fly a power-driven flying device (1890).

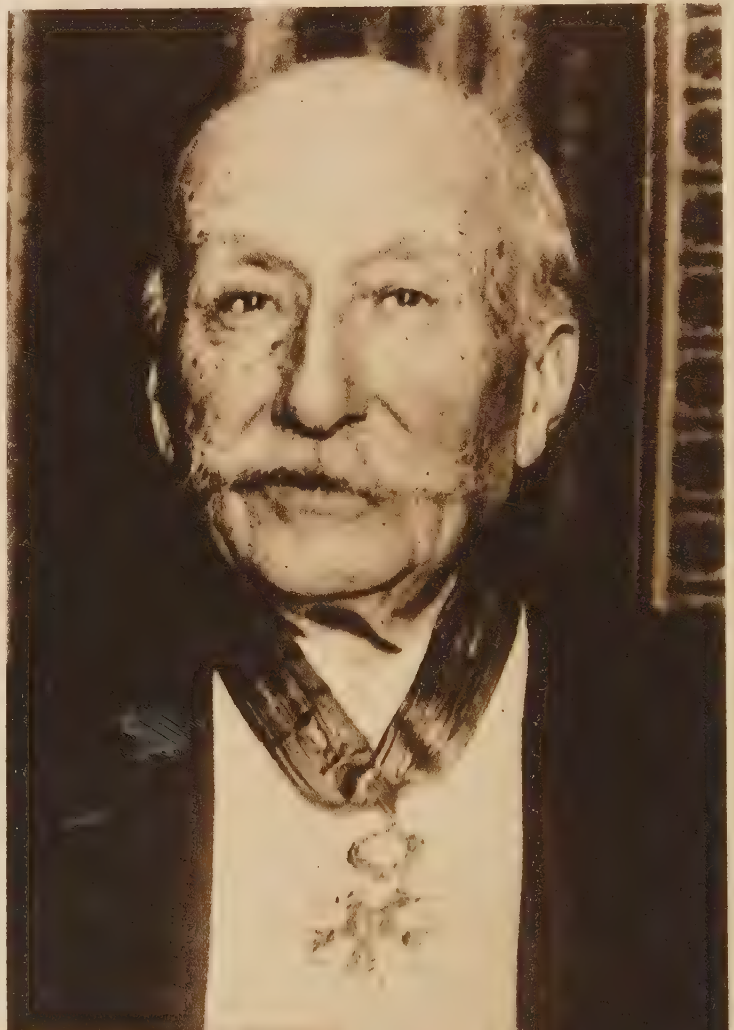
There will doubtless always be champions of Ader as the "First to Fly an Airplane," and there is evidence to indicate that he did get his machines off the ground more than once—but he could not control them *in the air*—and he *crashed all three.*

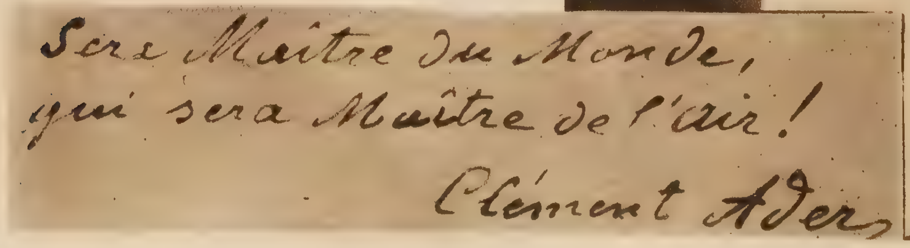
Ader's first machine, the Eole (above), was a birdlike monoplane with a screw propeller forward. It was powered with a 40-horsepower steam engine, weighed 1,100 pounds, had a wing spread of 46 feet and was 21 feet long.

Built in greatest secrecy at the Chateau d'Armainvilliers, near Gretz, it was tried out in private before a group of friends in the grounds of the chateau (October 9, 1890). Ader is claimed to have flown it a distance of 150 feet, when it came down in a smash because of deficient equilibrium.

Ader quietly built Eole No. 2. By special permission he tried this out on a prepared course of 2,400 feet at the Army camp at Satory (1891). It is said he taxied his airplane over the course several times and finally flew it 300 feet—but smashed a wing in coming to earth.

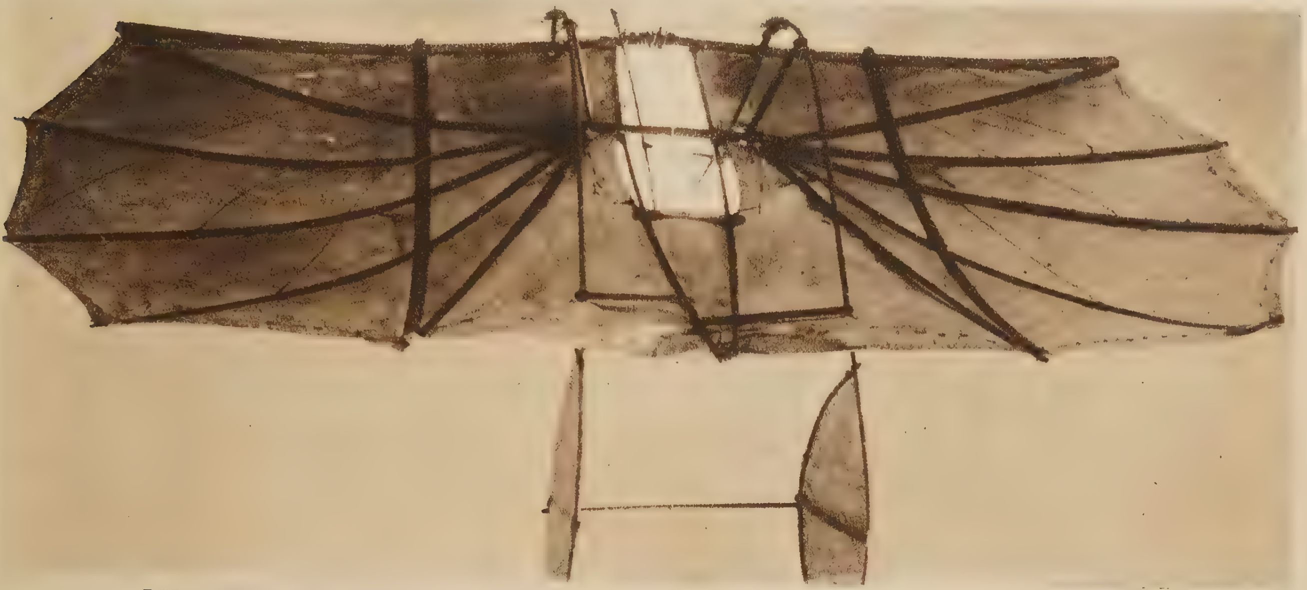
Determined from boyhood to build a practical airplane and fly it, Ader, who had lived for months in the interior of Algeria in Arab garb to study vultures in flight, had now spent 2,000,000 francs on his experiments. He sought and received moneys from the French War Department to continue and commenced a new airplane, the *Avion*, (May 1892)—with what result we shall note later (Page 80). Portrait of Ader at 84 years of age (right) in Herbert Collection. Facsimile (below) from an Ader letter in archives of Aero-Club of France.





Sera Maître du Monde,
qui sera Maître de l'Air!
Clément Ader

LILIENTHAL, *Engineer in* GERMANY, *Develops* GLIDER—1891



LILIENTHAL GLIDER MODEL IN THE NATIONAL MUSEUM AT WASHINGTON
Official Photograph from Smithsonian Institution.

OTTO LILIENTHAL (1848-1896), German engineer-scientist, did mankind a great service in first establishing the principles of bird flight in human gliding (1891-1896). Thirty years of research and preparation, by himself and his brother Gustave, preceded the day when Otto Lilienthal first flew his glider (1891). Then, in less than five years, he followed his initial triumph with more than 2,000 gliding flights—finally to come to a sudden death through an air mishap, as a martyr to science.

Lilienthal's first glider was constructed of strong waxed cotton cloth stretched over a framework of peeled willow wands. It weighed 40 pounds and had a wing spread of 107 square feet. Its passenger rested himself upon his forearms on the framework between the wings, his body hanging below. The German master first launched himself in soaring flight from a springboard in his own garden. Later, he went to a region of low hills outside Berlin and experimented with gliding against the wind. Finally he built a flat-roofed hut at the top of a hill and used its roof as a launching place, but he remained on the ground if the wind blew more than 16 miles an hour.

Lilienthal writes of being photographed in the air "sailing over the head of the miller of Derwitz (in whose barn I stored my apparatus) and his esteemed poodle dog." Gustave, who traveled much, re-joined Otto (1893). Both had served in the Franco-Prussian War (1870-71). The two brothers had begun their flying experiments at home in Anklam, Pomerania, when Otto was 14 years old and Gustave 13, their widowed mother financing their first wings of beech veneer. At night, for fear of their chums' gibes, they tried these out without much success because of the still air. Later, Otto brought palisander sticks from the Technical Academy at Potsdam and the boys made wings of goose feathers fastened to hoops to fit around chest and hips. This beating wing affair worked well in their mother's lofty garret.

The Lilienthals tested a contrivance (1871) in which the wings were moved with spiral springs. They launched it from a fourth floor window at 4 A. M. to avoid being seen—and landed in a heap because its center of gravity was wrong. Gustave returned from a stay in England (1874) and they resumed operations with a "Bird Flyer" modeled on the stork—*with a light motor.* The motor was too powerful and they broke both wings. Finally, Gustave went to Australia (1881), and Otto was out of active flying for ten years.

The Lilienthals, lying on their backs in the Anklam meadows, learned the ways of birds and butterflies in the air. That soaring expert, the stork, is abundant in Pomerania. They also studied the strong-flying albatross (left) and modeled their flying machines and gliders on what they learned. The first certainty acquired was the practical necessity of rising against the wind if one would fly. Later, they disregarded this and had some success in the still air of the great garret at home. But the still air of night nullified their earliest outdoor efforts.

Noted INVENTOR *Produces* GREAT MULTIPLANE—1893

Hiram S. Maxim

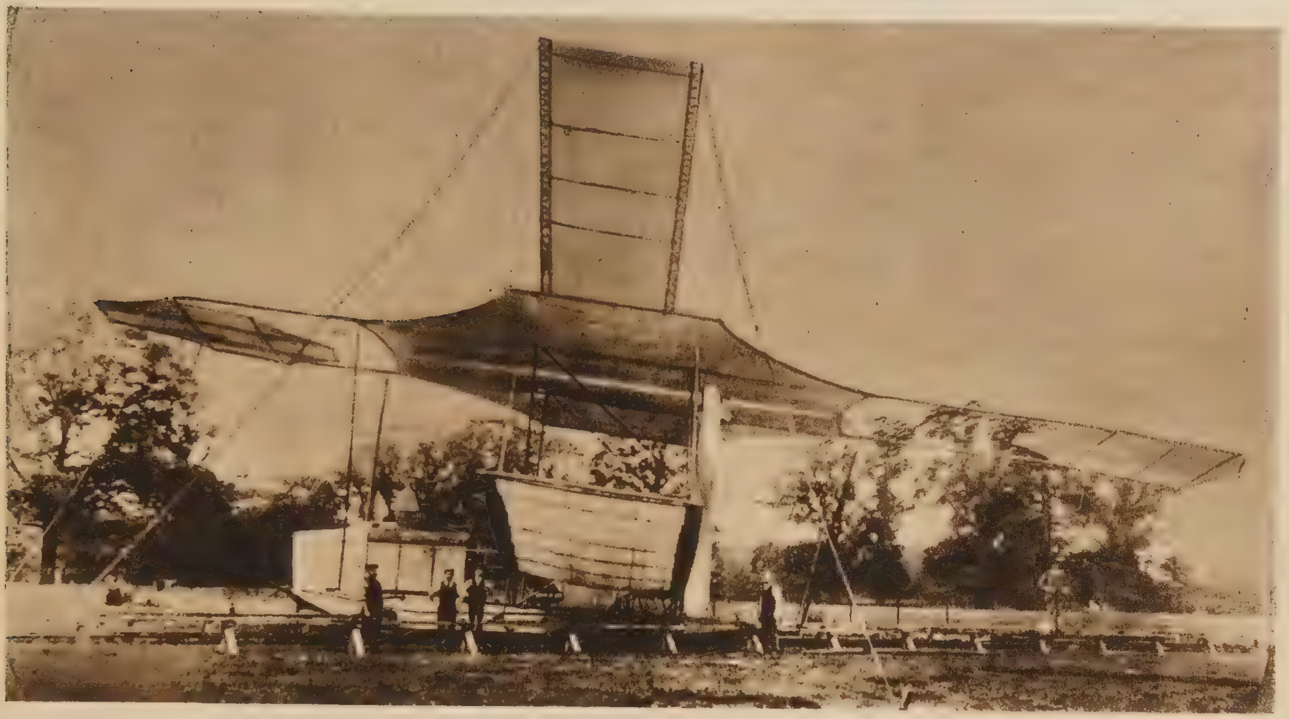
FAMOUS
AMERICAN
SCIENTIST
who became
BRITISH
Subject
and was
Knighted
by
QUEEN
VICTORIA.

MAXIM
Invented
a huge
FLYING
MACHINE
(1893)
and
established
its ability
to rise
in the air.

The
Great
Multi-plane
was
wrecked
in its
TRIAL
TESTS.

PORTRAIT
in
England
with
Royal
Decorations
Autographed
By the
Scientist

Sir HIRAM MAXIM *Tests* STEAM *Multiple in* ENGLAND—1893



THE HUGE MAXIM AIRPLANE IN ITS REMARKABLE TRIAL ON HIS ESTATE IN KENT
Official photograph in Collections of the British Museum and the Smithsonian Institution.

MAXIM, English inventor and scientist (Born in the United States, 1840), brings us a step nearer the successful airplane with the largest experimental machine ever built (1893). This huge machine, whose central plane was 110 feet long and which weighed 3½ tons, actually lifted itself from the half-mile of railway track on which it ran, with Sir Hiram aboard.

It crashed through the dual guard rail intended to restrain it from rising over 6 inches—and would have flown free if the inventor had not brought it to earth. It toppled over on its side, and Maxim, who had spent $200,000 of his private funds upon it, went no further with his experiments.

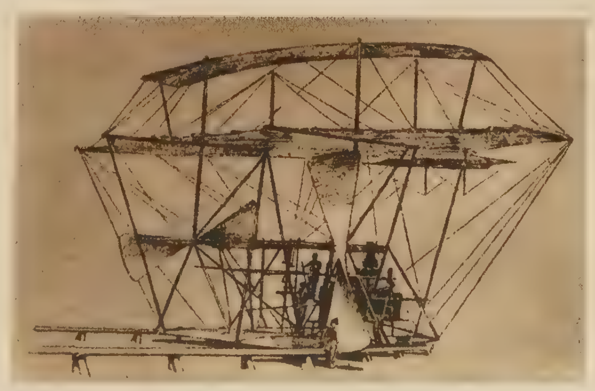
This great multiplane was twenty-five times the size of the largest gliders of Lilienthal, Pilcher or Chanute, with the enormous wing spread of 5,550 square feet. In addition to the vast central plane, which spread over fuselage and propellers like a mighty awning, it had five hinged planes on either side with which the pilot was to correct changes in equilibrium, and large front and rear rudders. Its twin propellers were 17 feet 10 inches long, operated by a 350-horsepower steam engine which burned benzine for fuel. It was built mainly of steel tubing and silk, the tubing acting as a circulation system by which the used steam was condensed to water to be used over again.

Apparently, Maxim's sole purpose was to show that this mammoth airplane *could* fly—but not to fly it, for he attached running gear which weighed a ton and a half. He had a light underbody built—for some vague time when he wished to fly—but never used it. Even so, his aerial leviathan one day (in 1893) lifted itself into the air against a ten-mile breeze—with hardly more than half its wing surface broken out—and sailed along for some distance, before it was blown over onto its side.

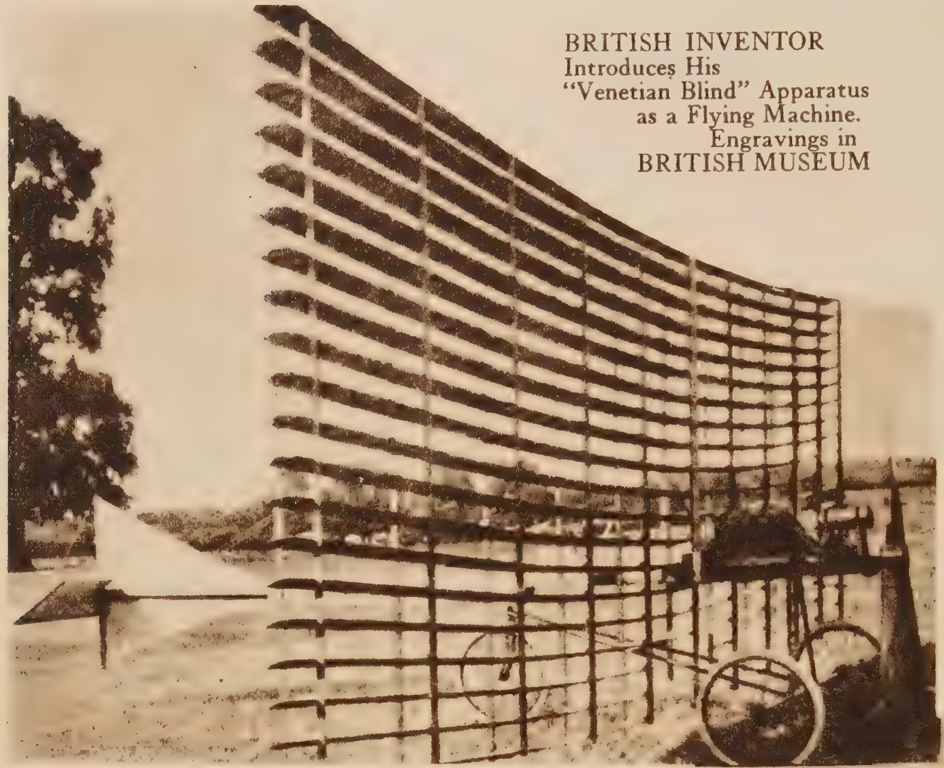
Sir Hiram then rigged the guard rails referred to, one on either side. Frankly, he could not afford to go into the air with this ponderous affair. Capable controls for actual flight had not been worked out and he well knew his steam-engine was unsuited to a flight of any length.

The final test was made (September, 1894) when the powerful multiplane broke through both guard rails and in a moment might have achieved free flight, carrying Sir Hiram and an assistant—but Maxim shut off the steam. He knew the thundering machine had not proper landing gear and they probably would be killed trying to land.

"Propulsion and lifting are solved problems," Maxim said, "the rest is a mere matter of time." In a paper before the First American Conference on Aerial Navigation (Chicago, 1893), Sir Hiram had control of a plane in the air completely worked out, in theory



ENGLAND *Witnesses Trial of* PHILLIP'S MULTIPLANE—1893



BRITISH INVENTOR
Introduces His
"Venetian Blind" Apparatus
as a Flying Machine.
Engravings in
BRITISH MUSEUM

This is the invention of a prominent and active member of the Royal Aeronautical Society in England —Horatio Phillips. He spent twenty-five years studying and experimenting with what we now call aerodynamics. He built a rough form of wind tunnel—possibly the first wind tunnel to be constructed—and in this tested air pressures and resistances on plane surfaces.

He developed the "aero curve," which he was convinced was the correct idea for mechanical flight. He even took out a patent (1884) on a series of narrow curved planes, hardly more than blades. These he used in his machine, which actually lifted itself off the track nine years later. His model used a two-bladed propeller with broad blades.

HORATIO FREDERICK PHILLIPS, of England, brought out the first tethered airplane to fly (May 1893). It ran on a circular track. Fastened to a central mast by wires, it was driven by a steam-engine mounted on a tricycle. At a speed of 40 miles an hour this contrivance rose three feet in the air and sailed around the track for at least two complete circuits, and did it repeatedly.

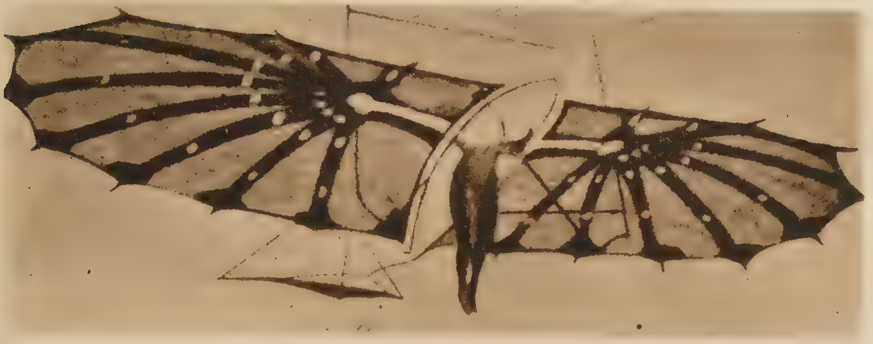
Phillips did not ride in it; it was only a large scale model machine. But with it the inventor established the fact that there was such a thing as sustaining a flying machine in the air, given sufficient power and a *curved* plane surface—not the flat plane surface with which so many experimenters had experimented.

PERCY SINCLAIR PILCHER (1865-1899), former British Navy sailor, introduced the Lilienthal glider to Great Britain. He was a pupil of the German master. Pilcher began to build bird-wing gliders (1895) at the age of 29—and at 34 he died from injuries in a crash in his glider "Hawk." He built four gliders altogether—"Bat," "Beetle," "Gull" and "Hawk"—all monoplanes.

Pilcher was a pioneer glider—from his first take-off from a hill on the banks of the Clyde at Cardross. He launched his glider frequently after Captain Le Bris' fashion—behind a pair of horses—but he used no cart. He met with many accidents—the gliders balked, spilled Pilcher and dropped on him—both needed patching often.

PILCHER "BAT"

NOVEL GLIDERS *Appear in* FRANCE *and* AMERICA—1895



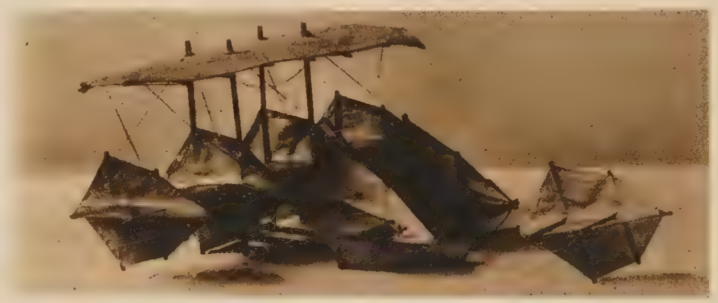
PILCHER LOSES LIFE IN GLIDER (left)—During the summer (1896), returning from Berlin to London, he built the "Hawk" and made 12 glides in it. He worked out a light engine to put into a triplane glider of the Hargrave type, but foggy weather, when about to demonstrate it at Market Harborough (September 30, 1899), caused him to give an exhibition with the "Hawk" instead. This snapped a guy wire at 30 feet up and quickly fell, crushing Pilcher. Unconscious when reached—he lived but two days.

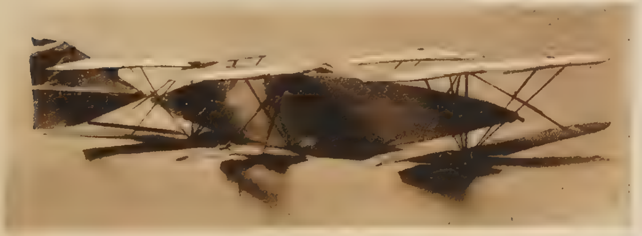
OCTAVE CHANUTE, distinguished American engineer born in Paris (1832), was first to sponsor extensive gliding experiments in America (1896 on). He was the real "Father of the Biplane Glider" which eventually developed into the airplane. His gliders made over 2,000 flights within four or five years, many of them by his assistants, Herring and Avery—for Chanute was 64 years of age when he made his first glide (1896). He had, however, done a great amount of laboratory work and experimenting with models before he tried out a full-sized glider out-of-doors.

Chanute completes the international trio of "Great Glider Exponents" who immediately precede the accomplishment of power-driven flight—Lilienthal in Germany—Pilcher in Great Britain—Chanute in America—but the transplanted Frenchman had a more direct influence on this achievement than either of the others. Though born in Paris, Chanute was a thorough American. He came to the United States with his parents at the age of six.

A brilliant engineer, Chanute had given special attention to bridge engineering and truss work. The truss construction of the biplane, with its struts and stays, largely originated with him. Thus, he left a marked impress on aviation.

Here we look upon Chanute's first models. One of his earliest models (right), now preserved in the National Museum at Washington, was built (1894) as a biplane. It had large upright plane surfaces set at right angles to the main plane, for lateral stability, which mostly obscure the lower plane in the picture. There is also a large rudder to the odd-looking affair, and peculiar side rudders or wings.



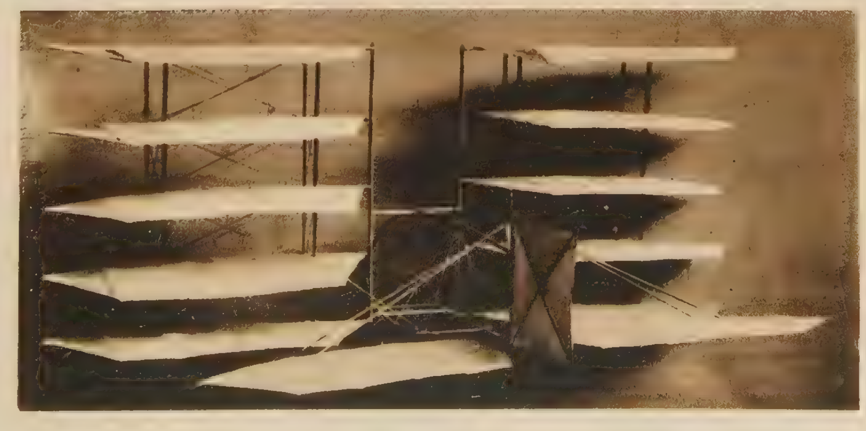


Chanute felt certain that Lilienthal and Pilcher were distinctly on the wrong track in attempting to control their gliders almost entirely by shifting the pilot's body.

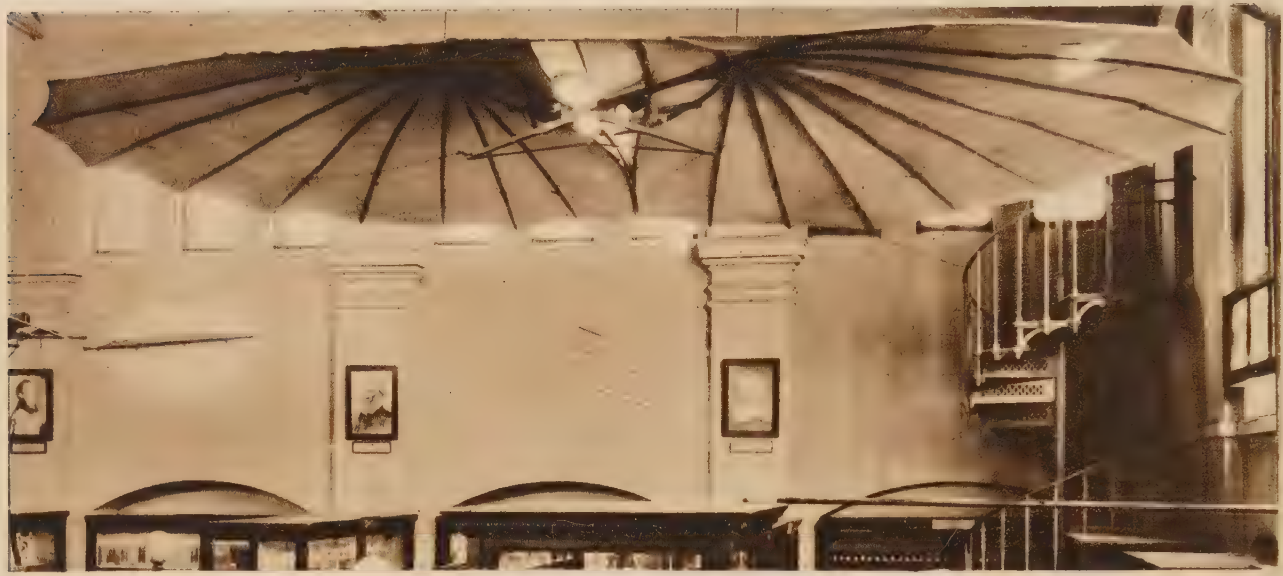
He believed the machine should have inherent stability to enable the operator to maintain equilibrium at all times and guide the craft by altering the position of movable controls. Hence the queer looking model (left) was constructed (1895) with six pairs of planes on either side of a cigar-shaped body (suggestive of the fuselage which came years later) and with a great tail to steer with.

The further Chanute went, the simpler and more scientific became his models. His final laboratory design (right) grew out of many experiments and was built (1895) after he had discarded much earlier work. Its five superposed planes, slightly curved, are well trussed together and it approximates in design the original Chanute glider used for outdoor practice.

These three Chanute models are preserved by the Smithsonian Institution in the National Museum at Washington. (Official Photographs.)



LILIENTHAL *Makes* RECORD—2,000 *Successful Flights*—1895



LILIENTHAL GLIDER IN THE NATIONAL MUSEUM AT WASHINGTON

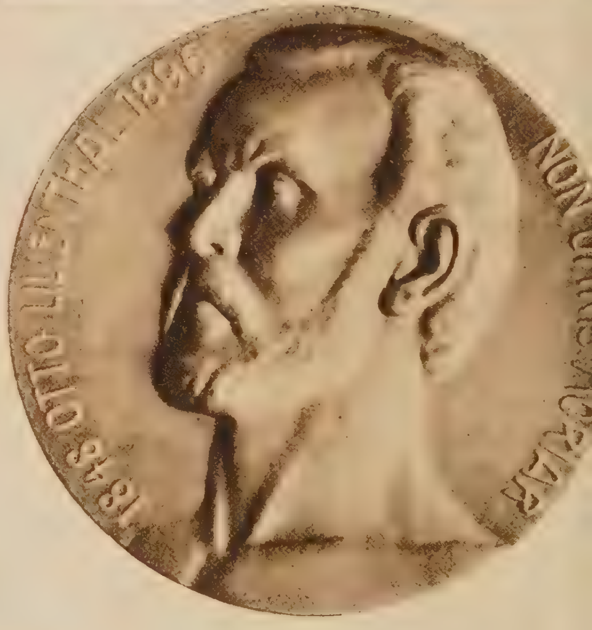
OTTO LILIENTHAL, German scientist who mastered "Bird Flight" (page 61), became the most accomplished flyer in human history up to now (1895). He gradually lengthened his first glides of 60 to 80 feet until he was gliding 100 yards—then 200 yards—then 300—and occasionally even a quarter of a mile.

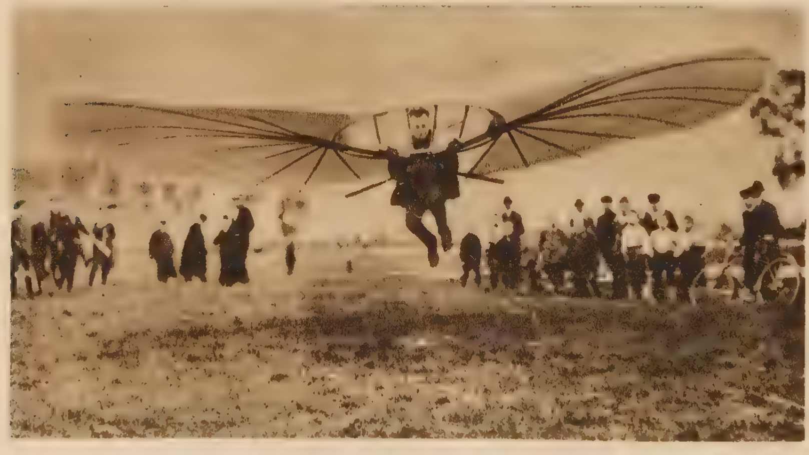
Always on pleasant Sundays, and often on week-days, he and his mechanic, Hugo Eilitz, would alternate in gliding flights from the tops of low hills near Berlin.

"To fly is everything!" cried the painstaking Teuton. "To contrive a Flying Machine is nothing; to construct one is something; to control it in flight is to reach the heights."

Lilienthal standardized on a wing spread of 23 feet for his gliders, which gave a wing surface of about 150 square feet to sustain his weight of 176 pounds and the glider's own 44 pounds (a total of 220) 50 to 75 feet in air. This he was able to guide in flight by shifting his own weight with consummate skill.

A canal was being built near his home at Gross Lichterfelde, outside Berlin, and the birdman seized the opportunity to have a private hill of conical shape thrown up from which to glide. At its base there was a cave in which he kept his gliders. But he later moved to Stollen, where the rolling hills were even better suited to his purpose.



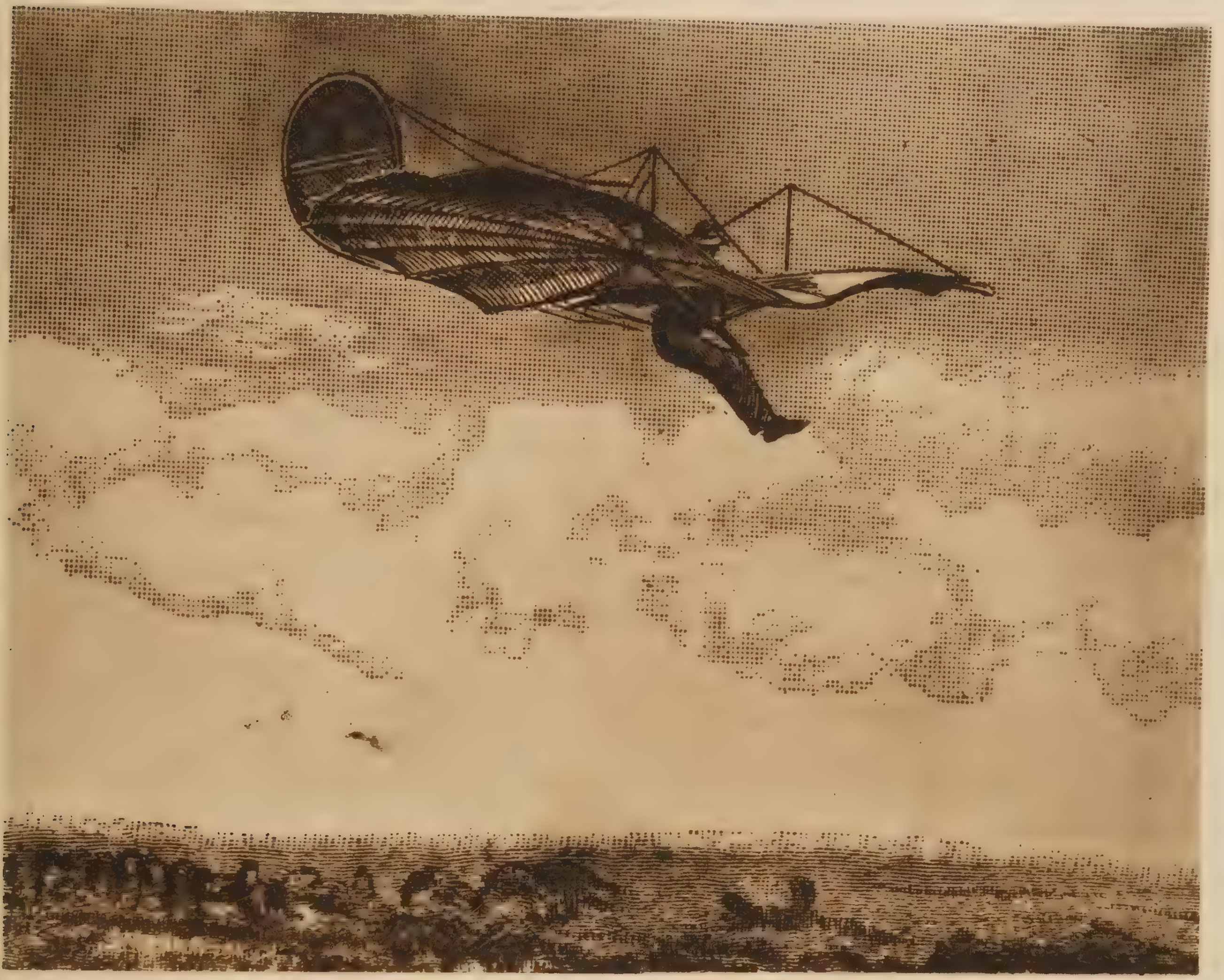


"I SHALL NOT WHOLLY DIE"

After more than 2,000 successful flights in curved-wing monoplane gliders, Otto Lilienthal built and flew a gliding biplane (1896). The time when he would feel safe in adding an engine seemed to have arrived, so thoroughly had he mastered the air. He constructed a 2½ horsepower motor, weighing 90 pounds, to run on carbonic acid gas, and put this into a special biplane glider with flopping wings.

The Lilienthal Medal (above) with its very appropriate sentiment, "Non omnis moriar" (I shall not wholly die) is in the Collection of Dr. F. M. Feldhaus in Berlin. Hans Richter, famous German glider champion of today, is shown (left) flying Lilienthal's last model. In Wide World Collection.

SCIENTIST KILLED *in Gliding Experiment in* GERMANY—1896



THE TRAGIC DEATH OF LILIENTHAL
Old Woodcut in the Museum at Berlin and the Collection of Major H. H. Arnold in America.

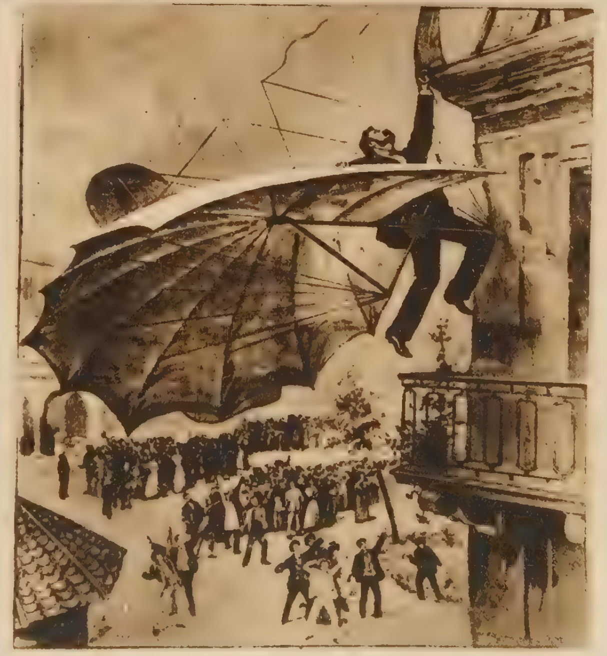
THE GERMAN SCIENTIST meets his tragic end (August 9, 1896). In one last glide at Stollen, before leaving for home to try out the engine-driven glider, he falls from a height of 50 feet and dies of a broke spine.

Only his mechanic witnessed the tragedy. His brother Gustave had left for home on his bicycle a few moments before; and when Eilitz reached his broken and dying chief, Lilienthal could not speak to him. He never spoke again.

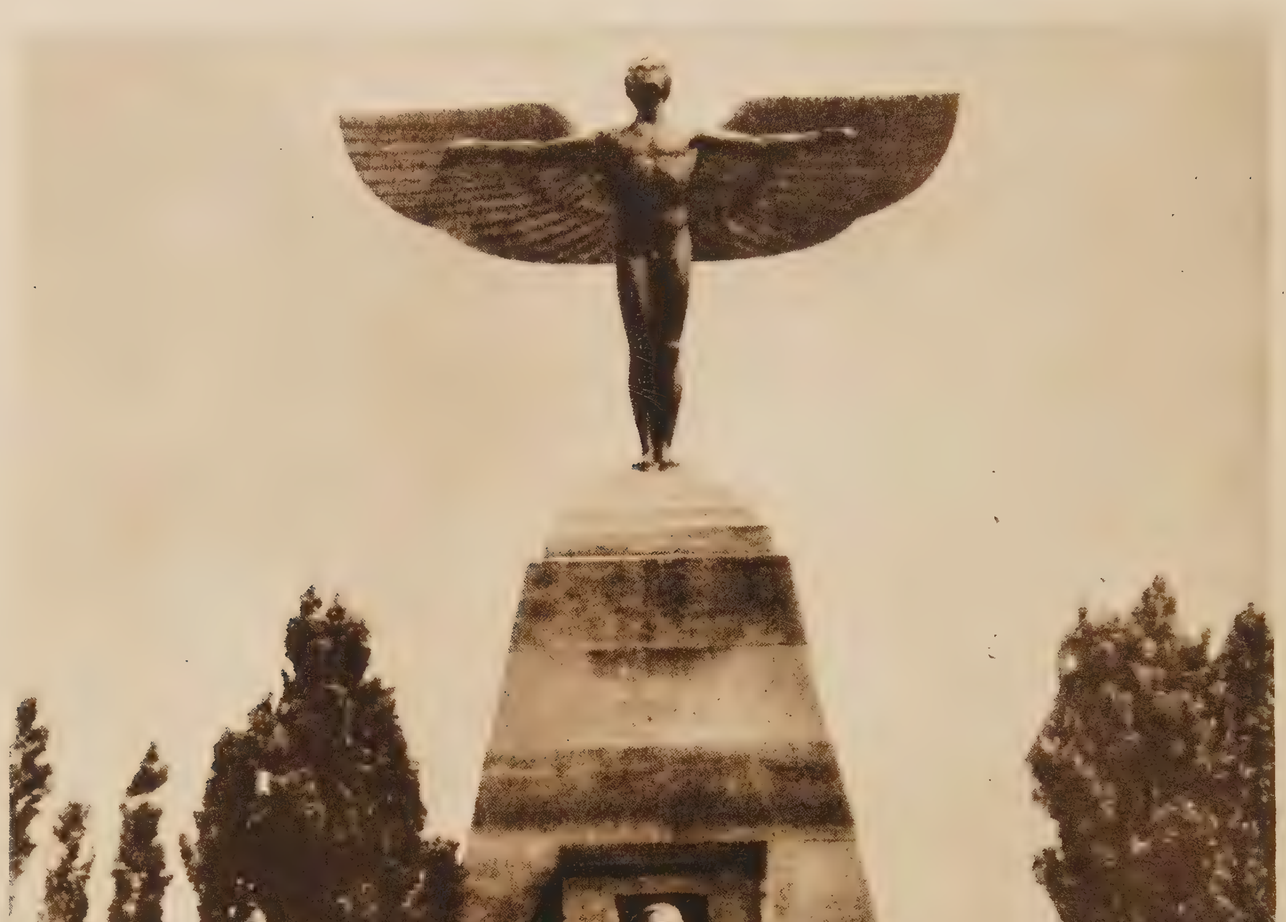
There had been many delays and disappointments, but all was in readiness to try out the power glider at Gross Lichterfelde. Otto had been testing a new rudder control, a line which ran to a band about his head.

The wind was uncertain. Lilienthal turned the glider down too sharply. He fell like a stone and next day he was gone—a pitiful end to a great career. Gustave had neither heart nor inclination to go on, and the power glider which might have established human flight, gathered dust in some forgotten corner.

The engraving (right) is a French conception of "Lilienthal's Last Glide" ("L'Homme Volant—Une experience tragique") in the Collection of Comte de la Vaulx in Paris.



Lilienthal MONUMENT *at Gross-Lichterfelde near* BERLIN



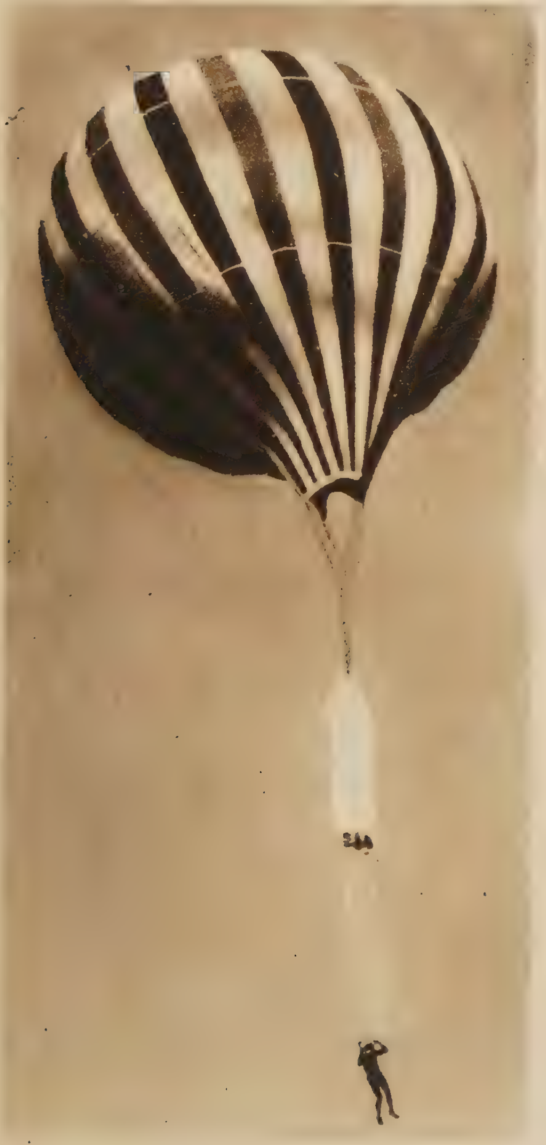
THE GREAT LILIENTHAL IS GONE—THE WORLD OWES HIM "A DEBT BEYOND PRICE"

A GRATEFUL FATHERLAND has erected this splendid monument in tribute to the memory of its aerial pioneer—the devoted Otto Lilienthal, who mastered bird flight and imitated the feathered fliers in more than 2,000 gliding flights in the course of five years. Peter Breuer is the sculptor of the Lilienthal Monument, which was dedicated with appropriate ceremonies (1914). It stands close to the scene of his "Aerial Triumphs".

AMERICAN *Parachutist* FASCINATES *the* NATIONS—1896

THOMAS SCOTT BALDWIN (1864-1923)—American balloonist, parachute jumper, aeronaut, dirigible expert—was a leading figure in aeronautics for thirty years. He made the first parachute jump from a balloon in America. He exhibited the parachute all over the United States, in Europe and in the Orient. He built the first dirigible balloon (Airships, these were called in the early years of American flying) and made the "First Successful Airship Flight in in America." Later he sold its first dirigible to the United States Army.

"Tom" Baldwin was actively in charge of a flying school and turned out pilots who made records when the United States finally entered the World War. The Baldwin portrait (right) was made when he was at the height of his career as a balloonist and parachute jumper (1896).



FAMOUS AMERICAN PIONEER AERONAUT-BALDWIN

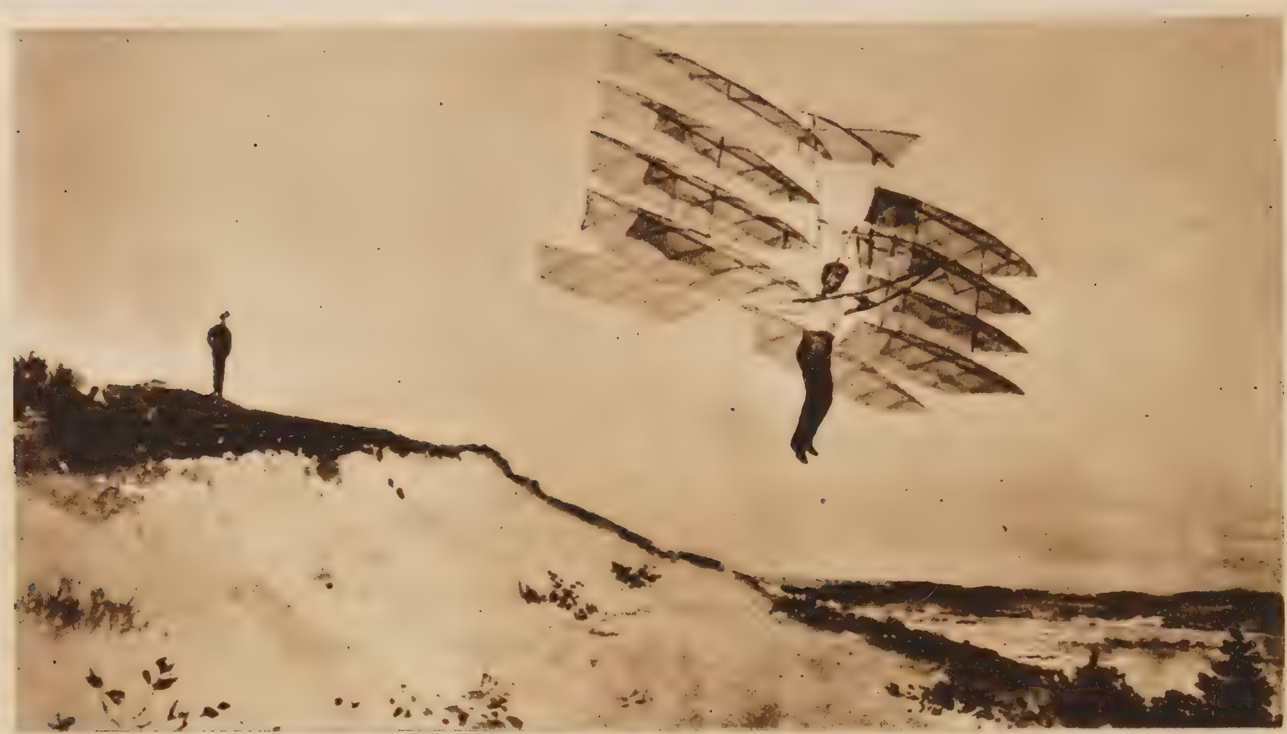
Major Baldwin became America's leading parachutist (through the '80's and '90's) when the County Fair was a great event. His first parachute drop (January 30, 1887) was before 30,000 people at Golden Gate Park, San Francisco. He had tried out the 'chute beforehand with bags of sand, indoors in the Merchant's Pavilion.

After numerous other successful parachute exhibitions on the Pacific coast, Baldwin came east to Chicago, where the city council passed an ordinance prohibiting parachute jumps as foolish and dangerous. He moved on to scores of other cities where he was hailed with enthusiastic celebrations. Then Major "Tom" took his balloons and parachutes to Europe and "did his stuff" before crowned heads and huge throngs with wild acclaim—in England and in France, where the parachute originated, and in the other continental countries.

The Prince of Wales (later King Edward VII) and his family were so "thrilled with the exhibition" they attended that the Prince gave Baldwin a seal ring. We shall find Major Baldwin a few years hence making the "First Airship in America" (1904).

Meantime (left) we note a typical parachute drop by J. C. (Bud) Mars, Baldwin's star pupil, who traveled with the Old Master during these pioneer years and later became one of America's earliest airplane pilots. Both photographs are from the Mars Collection of rare aeronautical exhibits.

CHANUTE *Perfects* GLIDER *on Chicago* SAND DUNES—1896



THE CHANUTE GLIDER now comes into its own in America (1896). Out of much experimentation Octave Chanute, scientist and engineer, produces a strong and simple Biplane Glider, of truss construction. Its stability in flight, efficiency and, above all, safety and ease of handling, far transcend the accomplishment of any previous worker in the history of aeronautics.

Chanute and his assistants, Augustus M. Herring and William Avery, finally left their Chicago laboratory and its models for extensive tryouts of full-size Chanute Gliders of different styles among the sand dunes of the Lake Michigan shore 30 miles east of Chicago. Their party went into camp there (June 22, 1896). With them was William Paul Butusov, the former sailor who built and flew the Le Bris-type gliders, and they were joined later by Dr. Ricketts, talented cook as well as physician. For two summers they carried on gliding experiments there. They even had monoplane gliders of the Lilienthal model, built by Herring, and much other paraphernalia.

The American scientist found the Lilienthal Glider required much practice in shifting one's weight, which confirmed Chanute's belief that inherent stability in the machine was imperative. Given that, the operator could focus his attention on the steering planes rather than on his own contortions. Chanute's first glider tried outdoors had 12 planes, grouped in pairs. Too many planes and improper arrangement defeated its efficiency. They changed to five pairs of superposed planes, and a pair in the rear to guide by.

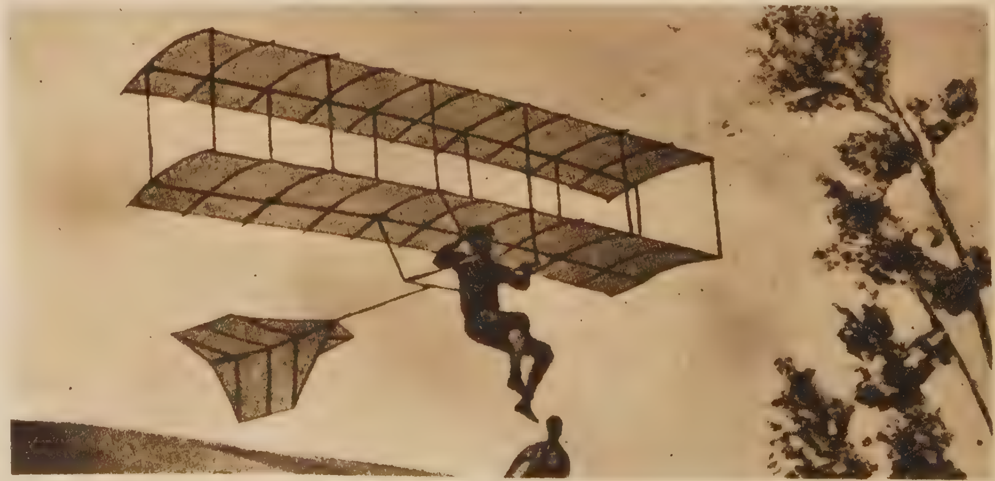
The five-decker was reduced to a three-decker and finally there evolved from the experiments what became known as "the Chanute Glider," the sturdy biplane of truss construction (shown below). This had 135 square feet of wing spread, weighed 23 pounds and readily carried 160 to 180 pounds of humanity at 20 to 40 miles an hour.

HERRING GLIDES

The Chanute photograph (right) shows Herring making a successful glide in the Chanute biplane glider.

In the second summer (1897) the inventor secured automatic stability for this by means of swerving wings. He added a seat below so that the operator need no longer hang on his forearms.

Over 2,000 glides were made altogether in Chanute Gliders—without an accident.



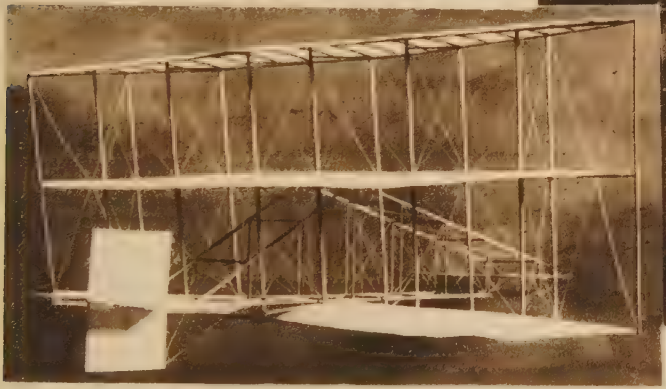
CHANUTE *Makes* PROGRESS *in* FLYING *in* AMERICA—1896

THIS GREAT SCIENTIST was a civil engineer of distinction, forty years of whose life were spent in railroad and bridge engineering. Dr. Octave Chanute was president of the American Society of Civil Engineers, president of the Western Society of Engineers and vice president of the Association for the Advancement of Science. Illinois University made him a Doctor of Science.

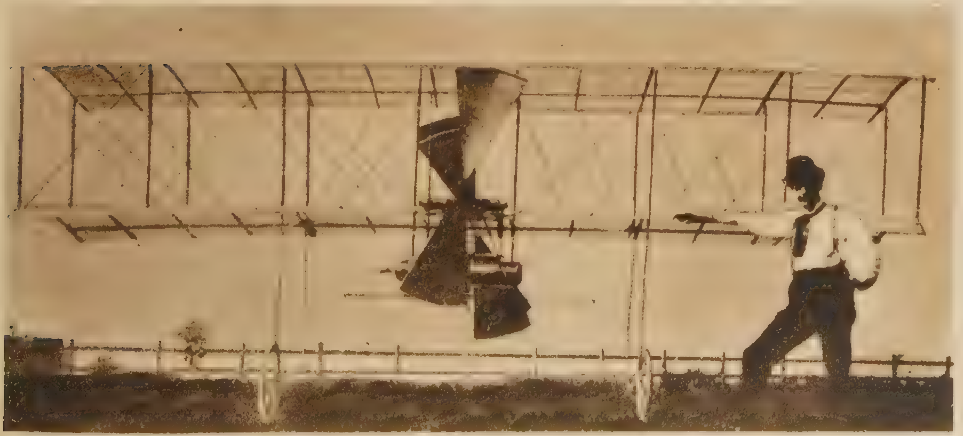
He started his career with the Hudson River Railroad, (1848), now the New York Central, and later was chief engineer of different Western railroads, including the Chicago and Alton (1863-67). He became chief engineer of the Erie Railroad (1873) and held that office ten years. He designed and built the Union Stock Yards in Chicago (1865) and the Union Stock Yards in Kansas City (1870).

Much of Chanute's later career was devoted to bridge engineering. He built the pioneer bridge across the treacherous Missouri River at Kansas City (1867-68). All the iron bridges were his work when the Chicago, Burlington and Quincy Railroad was built from Chicago to St. Paul, Minnesota (1885); and the Atchison, Topeka and Santa Fe from Chicago to Kansas City (1887-88); the Missouri River bridge at Sibley and the Mississippi bridge at Fort Madison were notable among these.

OCTAVE CHANUTE, DOCTOR OF SCIENCE
(1832-1918)
Engineer—Scientist—Inventor—Aeronautical Pioneer
He Advanced the Coming of the Aerial Age



CHANUTE TRIPLANE GLIDER
Preserved in the National Museum



AUGUSTUS M. HERRING, Chanute's assistant, declared the biplane glider ready for power. Chanute held that further experiments in automatic stability were needed first.

They parted. Herring built a Chanute biplane with a double tail (left—from Carl Dientsbach Collection) and put in a compressed air motor. A claimed flight of a few seconds in this (1898) was never verified.

AMERICAN *Scientist Lays* FOUNDATION *for New Age*—1896

DR. SAMUEL PIERPONT LANGLEY (1834-1906)——Astronomer—Physicist—Engineer—Scientist. He "Demonstrated the Practicability of Mechanical Flight."

PART IV

GREAT EVENTS *at* DAWN *of the 20th* CENTURY

GOAL *of the* AGES *within* REACH *at* CLOSE *of the* OLD ERA

THE HOUR is at hand—in the closing years of the Nineteenth Century we reach a period of assured expectancy. Inventive genius has brought us to the dawn of the New Age, "the rest is merely a matter of time." We are waiting now for the new *power* that will put the world into the air—and keep it there throughout the ages.

The future (as we stand back in 1897) depends largely on ten men—Ader with Santos Dumont and Mouillard in France—Pilcher and Phillips in England—Zeppelin in Germany—with Chanute, Langley, and the Wrights coming to the front in America. Lilienthal has lost his life in the "Great Cause" in Germany; Maxim has given up the battle against the elements. It is now the survival of the fittest.

Langley seems to be nearest the goal—his Steam-Driven Monoplane Model flies over the Potomac successfully for 3,000 feet (1896).

The Balloon still rules in the clouds—no formidable rival for supremacy has successfully challenged it. Andree, of Sweden, starts on the First Flight to the North Pole (1897)—and is lost with his two comrades—never to be found; while Ader's Steam "Avion" is wrecked in France (1897). The Turkish-Greek War is raging and the Klondike Gold Rush is on.

Zeppelin is building his rigid Airship in Germany (1898) when the U. S. Battleship "Maine" is blown up in the harbor of Havana and war is declared between Spain and the United States; Dewey destroys the Spanish fleet in Manila Bay; Roosevelt leads his Rough Riders in the Battle of San Juan in Cuba; military balloons are used by the Americans in the Battle of Santiago as Admiral Cervera's Spanish fleet is destroyed; and Hawaii, Porto Rico and the Philippines are acceded to the United States.

Pilcher is killed in his experiments in England (1899), as the British launch their military observation balloons and Baden-Powell kites against the Boers in the South African War (1899); Lord Roberts' Air Forces are constantly under artillery fire and shot down in battle. The Observation Balloon is well established in warfare.

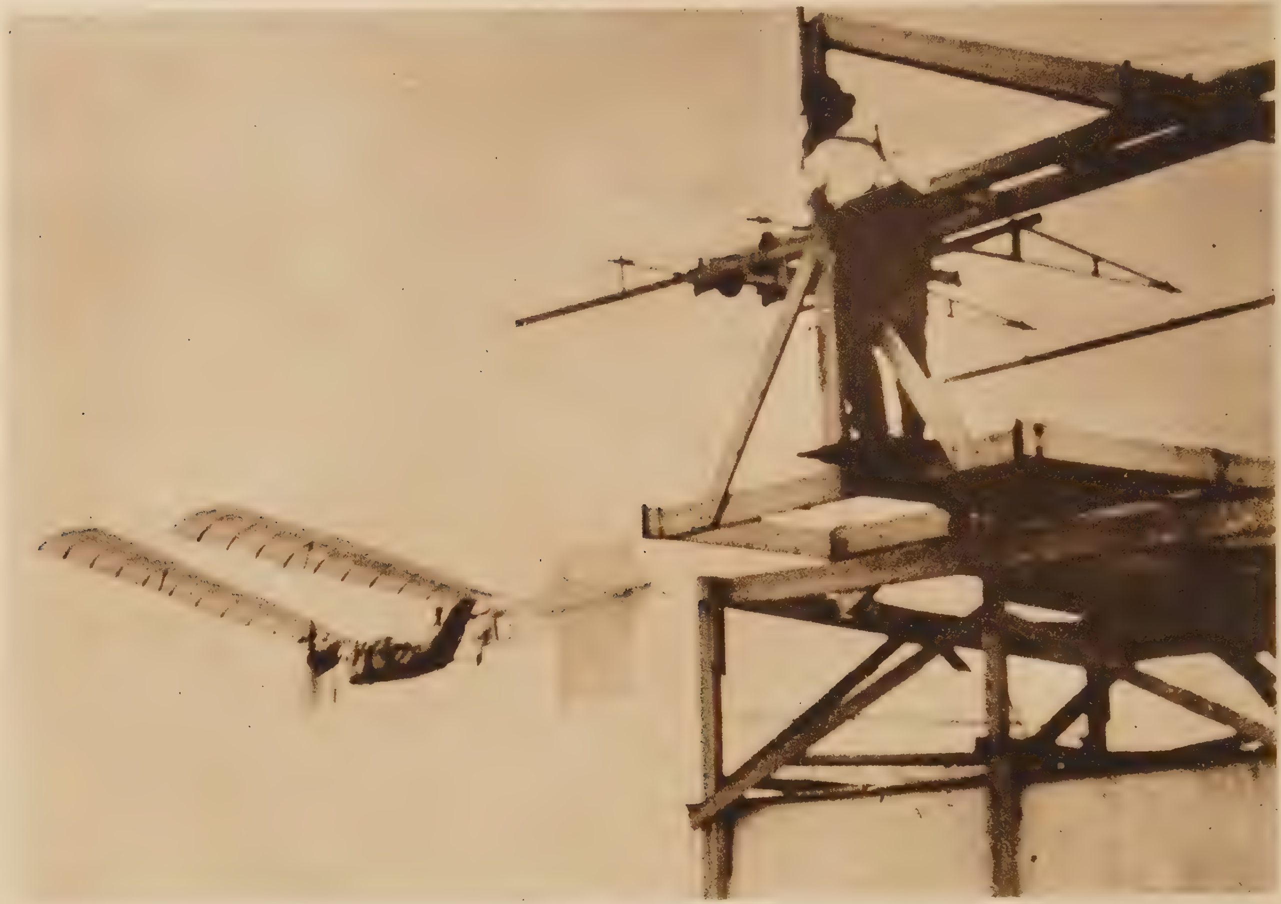
The automobile is forcing its way to the supremacy of the road, soon to monopolize ground transportation and become a dynamic power in human progress. The gasoline engine is in combat with steam and is soon to win the leadership—to ally its power with the Science of Aeronautics and start the New Era.

The century closes with Langley in the forefront in the ranks of the "Heavier-than-Air" proponents; the Wrights are coming rapidly to the front with their successful Gliders in flight; Santos Dumont is creating enthusiasm with his courage and daring in Paris; Zeppelin is about to startle the world with his Airship.

The foundations have been laid by the lives of thousands of men down through the centuries. Generations have come and gone, each carrying us onward toward the goal. America—England—Germany—France—which is to win the age-long race?

The moment of the Great Victory is on the threshold.

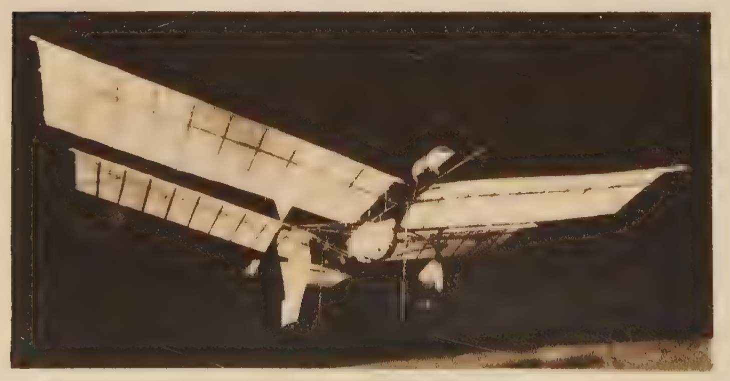
TRIALS *of Dr.* LANGLEY'S *Power-Driven* AERODROME—1896



THE WORLD'S FIRST LARGE POWER-DRIVEN MODEL AIRPLANE IN ACTUAL FLIGHT
Original Aerodrome now in Possession of the National Museum at Washington

THIS HISTORIC EVENT took place in notably successful experiments (May 6 and November 28, 1896). Langley established beyond question the practicability of sustained mechanical flight—after centuries of human effort toward this goal.

Years of research and hundreds of small experimental models preceded Dr. Langley's construction of this large model "Aerodrome" (1894)—No. 5 of a series which began three years before (1891). It was a tandem monoplane 16 feet long, with a 13-foot wing spread, and twin propellers powered by a little 1½-horsepower steam engine. Field trials of Nos. 1 to 4 inclusive, had been failures, and when first tested No. 5 did no better. But increased engine power gave Dr. Langley actual flight lasting 6 or 7 seconds (1894).

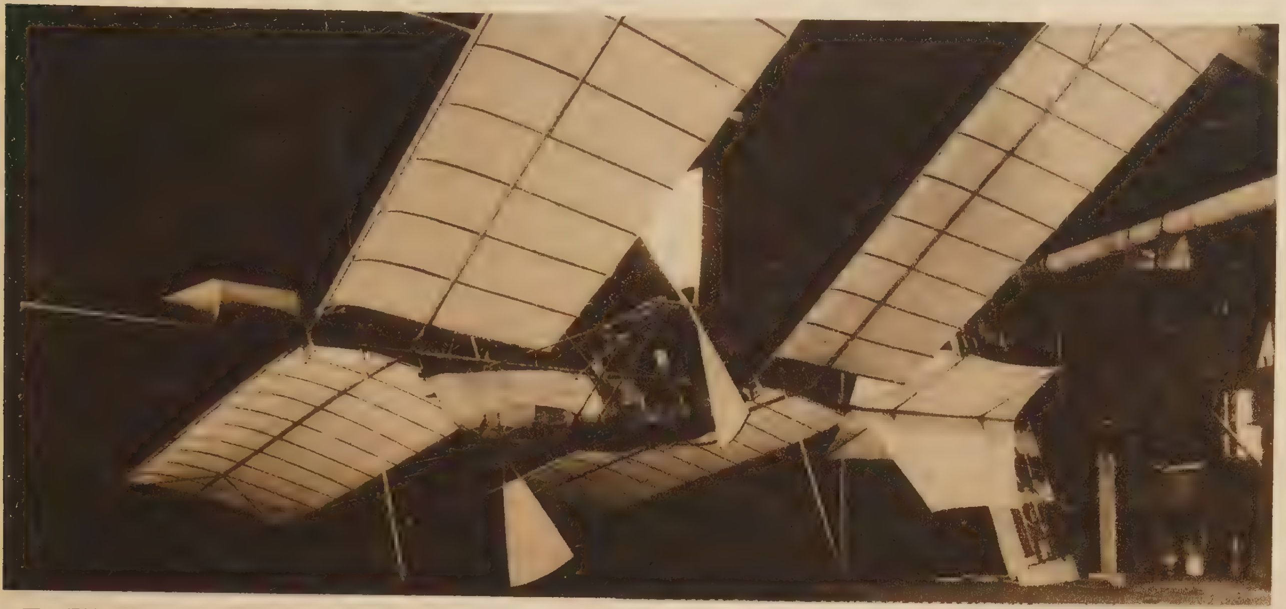


Dr. Langley made no more trials until he had further improved his engine. He built a duplicate No. 5—this failed. But Langley's original No. 5 was finally a great scientific success.

Launched by a catapult from a Potomac River houseboat, with engine and propellers running, this twice flew 3,200 feet, in graceful, sweeping curves. When engine fuel and water supply were exhausted, it gently made a three-point landing on the broad river below.

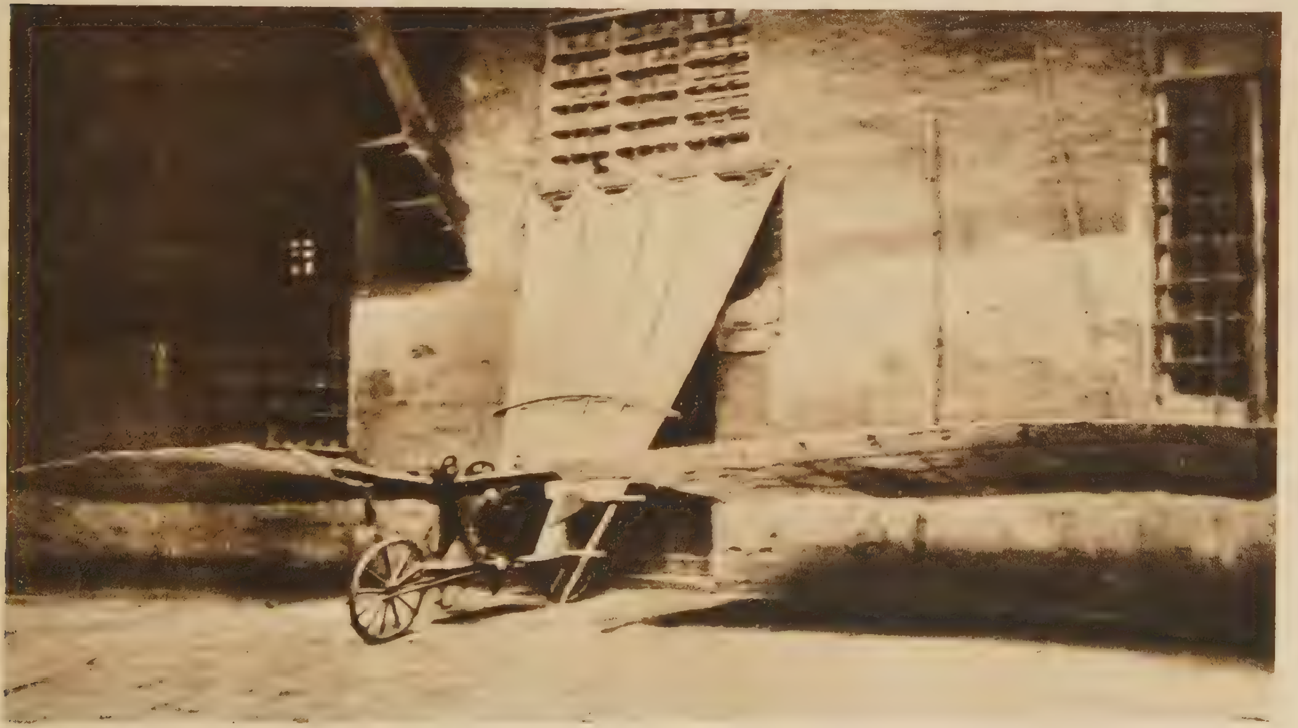
"Its motion was so steady," said Dr. Alexander Graham Bell, who witnessed the events, "that I think a glass of water on its surface would have remained unspilled."

AMERICA *Experiments with* SEARCH *for Motive* POWER—1896



OFFICIAL SMITHSONIAN EXHIBIT OF LANGLEY MODEL AERODROME—This successful No. 5 model (above) made a flight of about 3,000 feet (over half a mile) at a speed of 20 to 25 miles an hour—and settled gently onto the broad bosom of the Potomac River (May 6, 1896). Later, No. 6, a similar machine was flown 4,200 feet—about four-fifths of a mile—at 30 miles an hour over the Potomac River, on November 28, 1896. Dr. Langley, with his duties as Secretary of the Smithsonian Institution, believing he had solved the problem in its scientific aspects, went no further at this time. We shall see what happens when, seven years later, he tried out his "Aerodrome" in man-carrying size.

LOUIS MOUILLARD'S "BIRD FLYER" (Below)—This Algerian poet-farmer built the bird flyer as the culmination of a lifetime of observing the great birds of his homeland. Mouillard was the "French Pioneer of Gliding." He was not a man of means nor skilled in construction and he reached his limit in the Gliding Airplane pictured below, with its broad tail and a method of flexing its wings to ensure control in the air. Mouillard wrote a book on gliding, "*L'Empire de l'Air,*" an essay on bird flight as applied to aviation (1881).

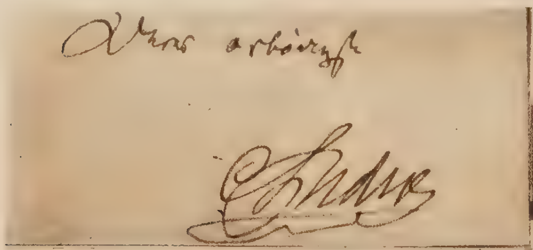


First ATTEMPT *to Reach* NORTH POLE *Through the* AIR

SALOMON AUGUST ANDREE, Swedish scientist and engineer, sailed away from Danes Island, Spitzbergen, in the great balloon "Ornen" (Eagle) in the first attempt to reach the North Pole by air (July 11, 1897)—and disappeared almost without trace in the mysterious silence of the frozen Arctic!

Two companions were with him, Knut Fraenkel and Nils Strindberg. The only word ever received from the party, a message dated two days later saying all went well on board, was brought back by a carrier pigeon after eleven days. Two buoys containing word dropped on the day of the ascent were found long afterward.

Expeditions have searched unsuccessfully for further evidence of their fate, the first (November 1897) after shipwrecked sailors reported hearing cries of distress. A few empty buoys found on the Iceland and Norway coasts are the only result.



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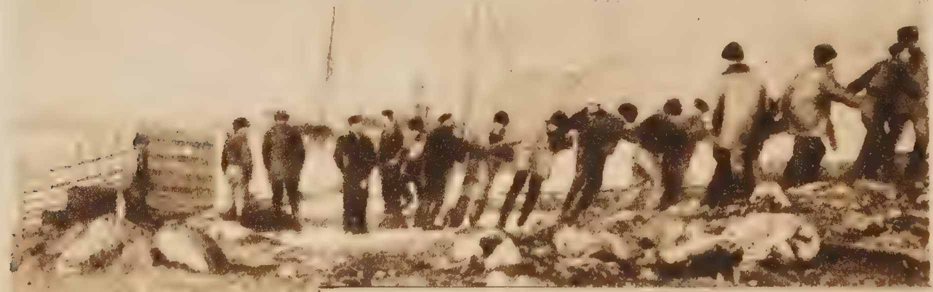
Andrée

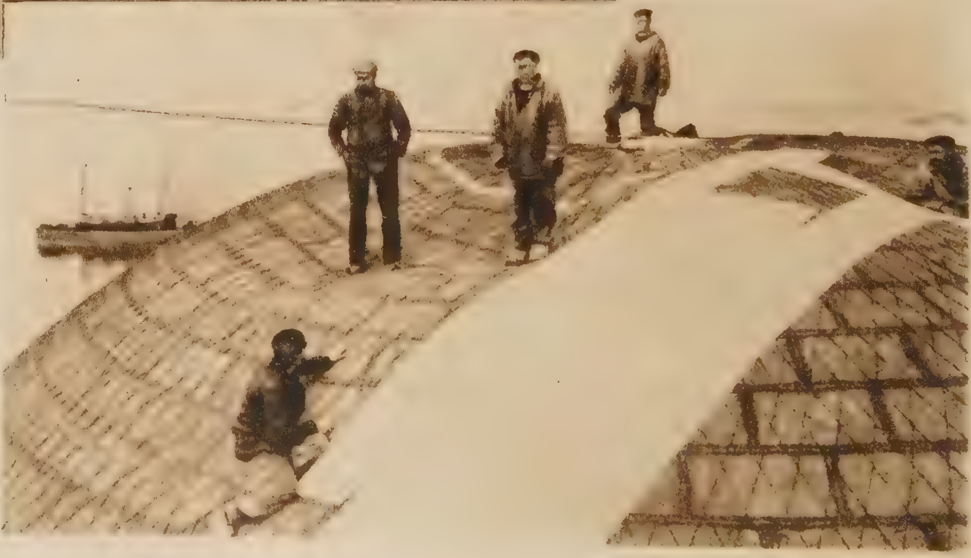


Portrait of Dr. Andree
(Above)
By G. Florman, Stockholm.

Landing the Balloon
at Danes Island
(Left)

Testing the Balloon
for Possible Leaks
(Below)

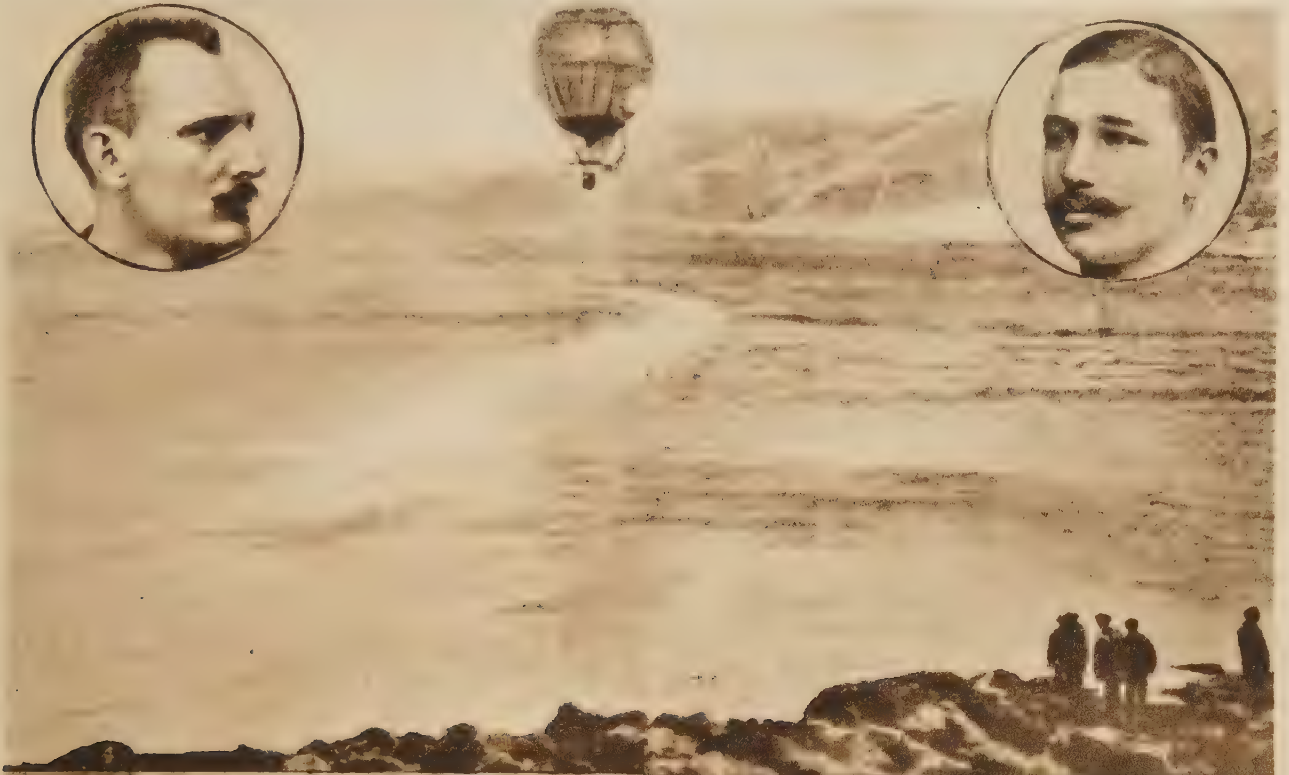
In the Collection
of the Smithsonian
Institution, Washington



Andree stood high in Swedish scientific circles as head of the Royal Patent Bureau at Stockholm. He had made a famous balloon voyage across Sweden from Gothenburg to Stockholm, 245 miles, in about four hours.

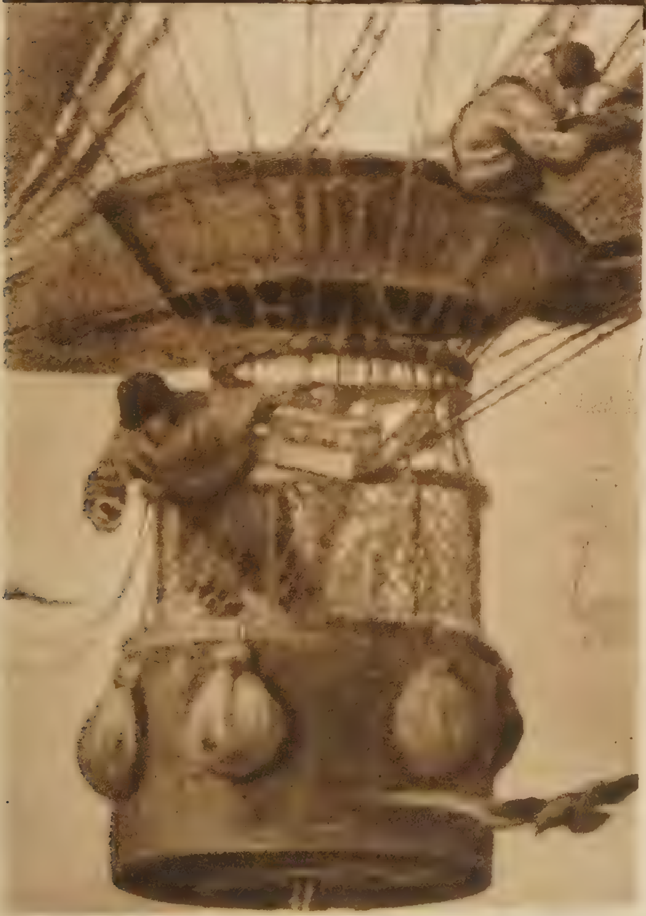
His North Pole voyage, intended to be from Spitzbergen to Bering Strait, was financed by King Oscar of Sweden, Baron Dickson and Dr. Alfred Nobel, who subscribed $48,000. Andree was to have made his flight (1896), but unfavorable winds balked him.

ANDREE *Mystery*—LOST *in* BALLOON *in* ARCTIC—1897



ANDREE OFF FOR THE NORTH POLE (Above)—Photograph by A. Machuron in Smithsonian Collection. La Chambre and Machuron of Paris built the great balloon of the Andree expedition, and the latter aided in its preparation and was present when it started for the Pole.

Portraits of Knut Fraenkel (left, above) and Nils Strindberg (right, above) Dr. Andree's companions, by G. Florman, Stockholm. In the Collection of the Smithsonian Institution, Washington.

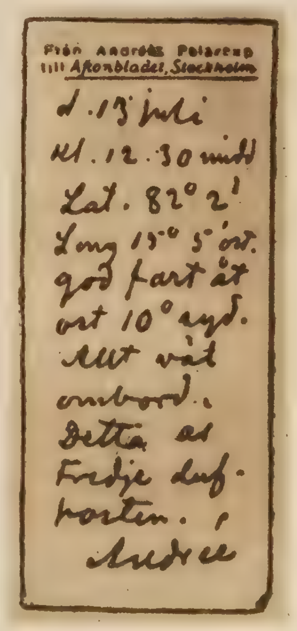


THE LONE MESSAGE

"From Andree Polar Expedition to the *Aftonbladet*, Stockholm: July 13, 12.30 P.M. Latitude 82.2° North. Longitude 15.5° East. Good journey eastward, 10 degrees South. All goes well on board. This message is the third send by pigeon.

ANDREE."

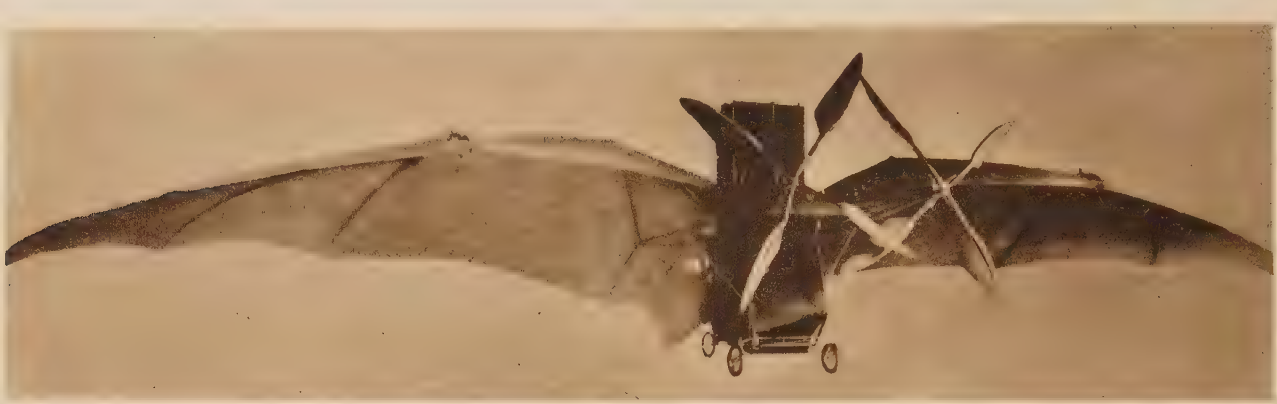
London Graphic sketch (left) shows one of Dr. Andree's companions releasing carrier pigeons to carry such messages back to anxious friends.



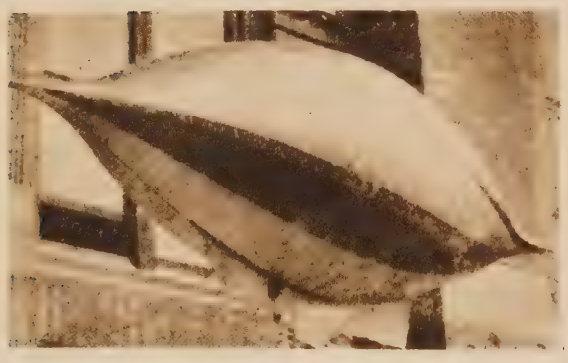
Från Andrées Polarexp
till Aftonbladet, Stockholm

d. 13 juli
Kl. 12.30 midd
Lat. 82° 2'
Long 15° 5' öst.
god fart åt
ost 10° syd.
Allt väl
ombord.
Detta är
Tredje duf-
posten.
Andrée

TRIAL *of* ADER'S "AVION" *Flying Machine in* FRANCE—1897



"DID THE 'AVION' FLY?"—IT ENDS ITS CAREER IN WRECK AND DISCOURAGEMENT
Exhibit in Collection of the French Government—Photograph in the Herbert Collection.



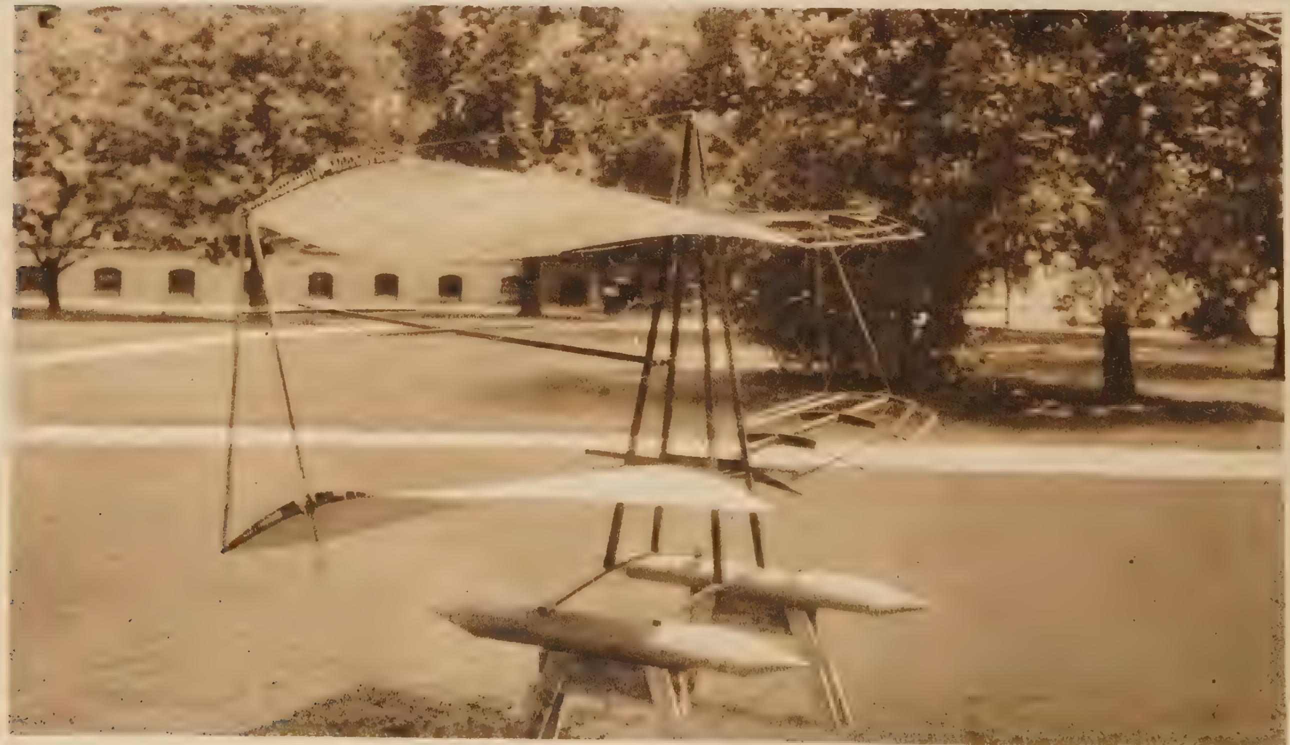
ADER'S "AVION"—His third and last airplane—was finally ready for trial flights. It was tested August 18 and 20, 1897. The first day it completely left the ground several times and encouraged the observers; the second day it got into the air in a violent wind. Ader could not control it and it was badly wrecked. Ader was unhurt.

General Mesnier, and other French army officers present, considered its "flight" to be but a few hops. But the fact remains it crashed in a heap and the French War Department, which had subventioned Ader to build it, abandoned the project.

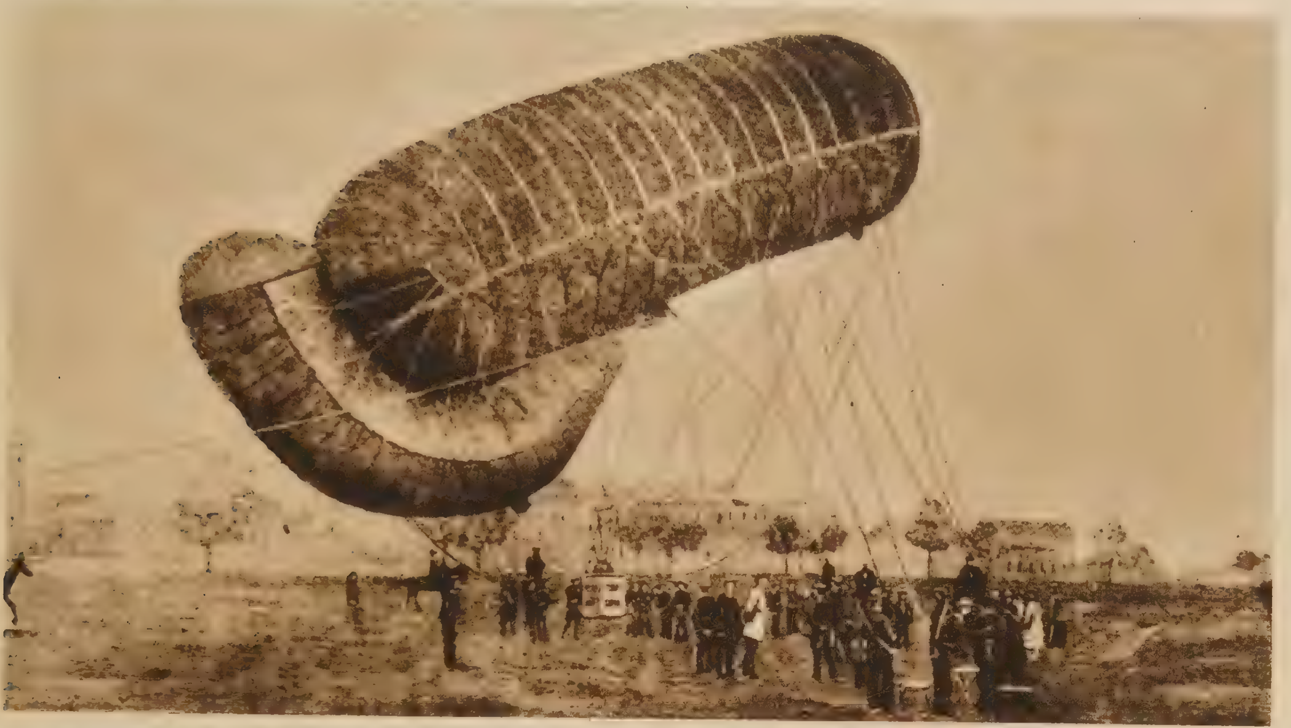
Ader lived 28 years longer—to see the sky "filled with aircraft in war and peace," but his work in aeronautics ended with the ill-fated "Avion."

MYERS' ELECTRIC AERIAL TORPEDO
This made hundreds of flights (1897-1900)

GALLAUDET'S EXPERIMENTAL MODEL BIPLANE (Below)
Twenty years later the Gallaudets built airplanes

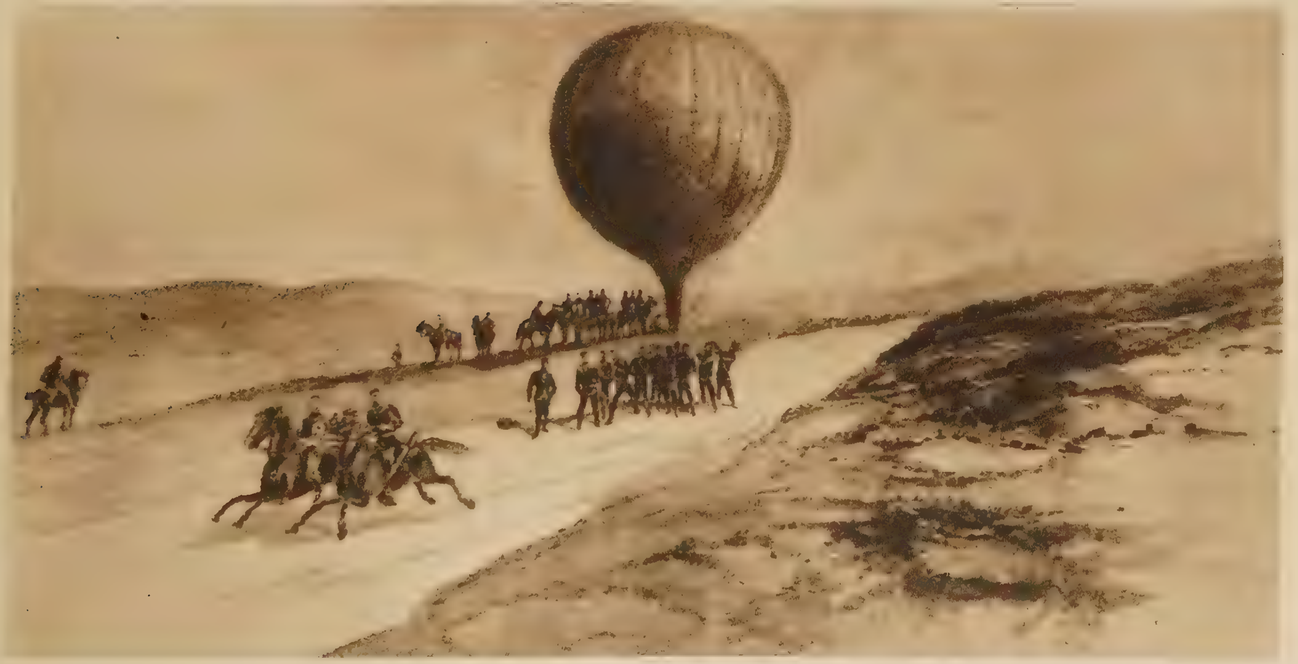


Novel WAR BALLOONS *in* GERMANY *and* ENGLAND—1897



GERMAN ARMY OFFICERS—Major von Parseval and Captain von Sigsfeld—were the originators of the Kite Balloon for military uses (above) which was first used in German army maneuvers (1897). The spherical balloon was now to be completely discarded. It whirled in the air and made observation difficult. The Kite Balloon, known later as the "Drachen" Balloon, was a great improvement, inasmuch as it would remain steady in the air and could carry a larger car. This too is to pass through many improvements.

ROYAL BRITISH ENGINEERS (below) are shown conducting balloon maneuvers on White Horse Hill (1897). An English officer, General John Money, wrote the first treatise on balloons for military purposes almost a century before (1803). It was long after the scene here presented that the British Army availed itself of the "Drachen" Balloons developed in Germany, or the "Caquot" Balloons used by France.



SANTOS-DUMONT *Acclaimed in Great* FLIGHTS *in* PARIS—1898

ALBERTO SANTOS-DUMONT (born 1870), a wealthy young Brazilian coffee planter, now appears on the scene of world aeronautics in Paris (1898).

Santos-Dumont was the "First Great Aeronaut in Airships" to build, control and direct their course in long and sustained flights. His continuous flights over Paris focused the attention of the world on the coming of the New Age. He made the dirigible balloon a practical vehicle of travel and takes his position as an epochal figure.

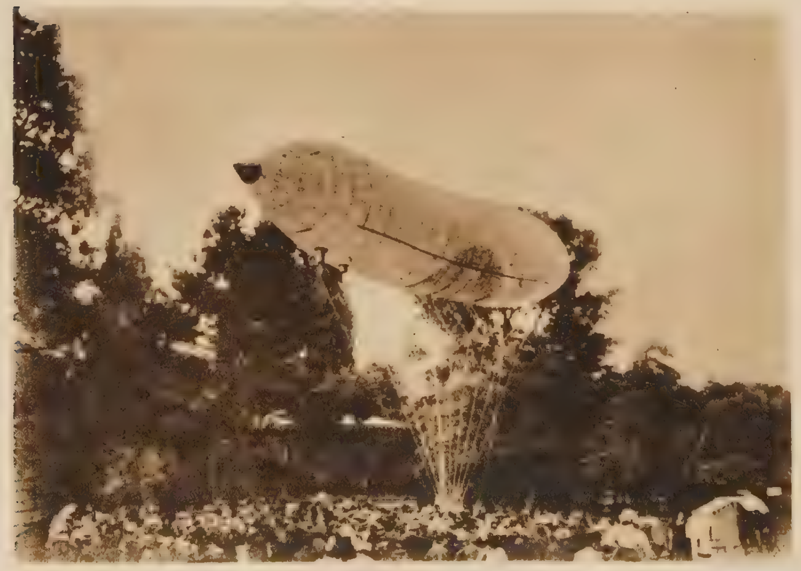
He was the first to fly an airship around the Eiffel Tower (as we shall see on page 83). His dirigibles under perfect control became familiar sights over the French capital. He kept a fleet of them at the World's First Airship Station which he established at Neuilly. This valiant South American put his fleet of airships at the command of the French Government in case of war against any other Power "except Brazil and the United States."

Santos-Dumont first used a cylindrical balloon of varnished Japanese silk, with pointed ends, 82½ feet long, and 11½ feet in diameter, with an air pocket in the center underneath. Sixty feet below he swung a light basket and installed the 3½-horse-power gasoline motor of his tricycle to operate a two-bladed propeller. He controlled the poise of the machine by shifting weights fore and aft, and steered with a rudder of silk stretched over a steel frame.

Santos-Dumont drove locomotives on his father's Brazilian coffee plantation at an early age. At 15 he saw his first balloon in Sao Paolo, but was not permitted to go up in it. His first balloon ascension came when he was 24 and had lived in Paris six years (1897). La Chambre and Machuron, who built the balloon for Andre's ill-fated to the North Pole attempt, charged the young Brazilian 250 francs to take him into the air in a spherical balloon.

SANTOS-DUMONT IN CARRIAGE OF AIRSHIP IN PARIS
Famous Brazilian who inaugurated New Aerial Era in France

(Below) FIRST DIRIGIBLE READY FOR HISTORIC ASCENT
Photographs from Santos-Dumont's Collection of Aeronauticana

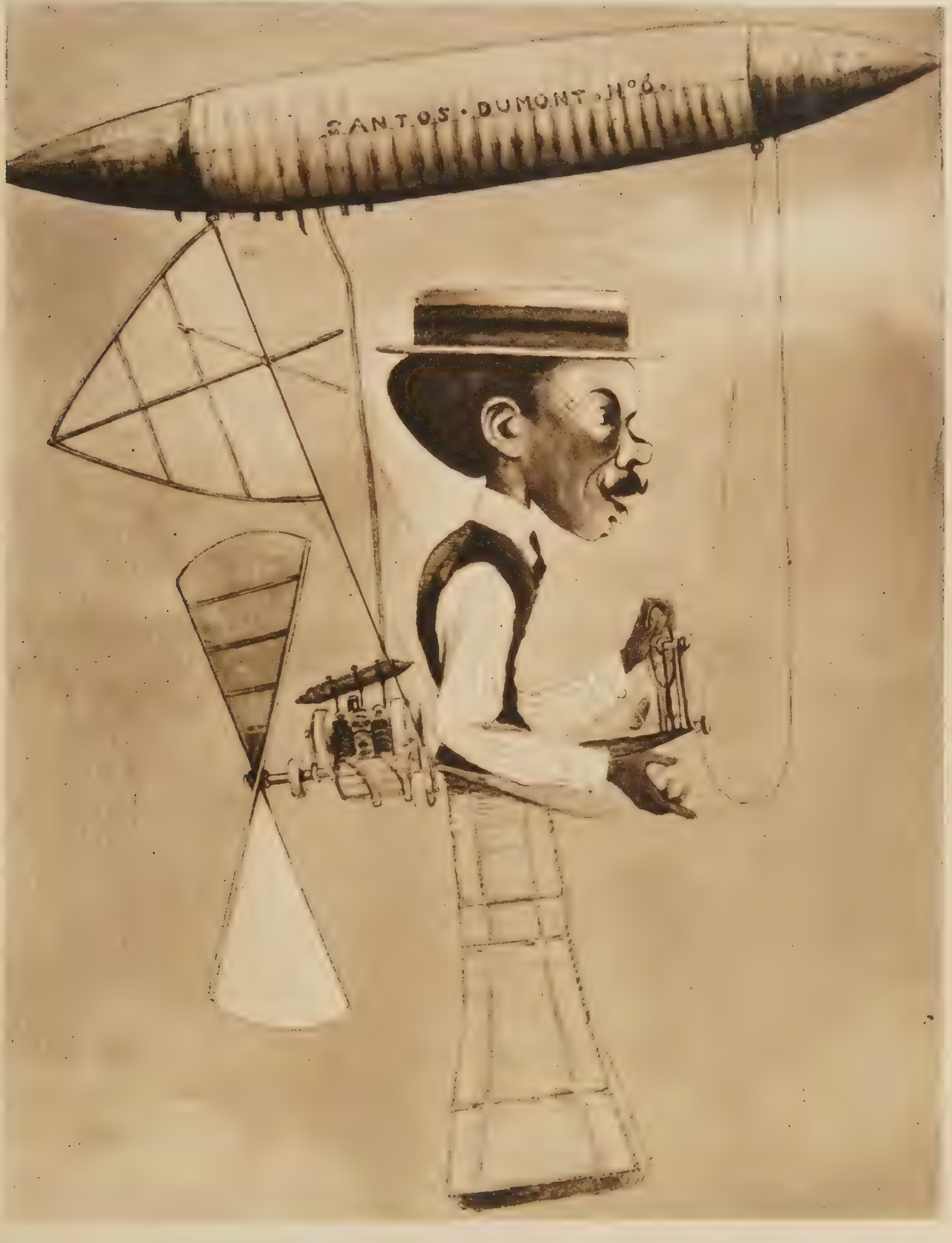


Santos-Dumont rose from the Zoölogical Gardens in Paris (September 20, 1898) in "Santos-Dumont No. 1" (left), to the delight of a great throng. He sailed away at an altitude of 1,500 feet toward Longchamps. In the midst of their skepticism over his danger from fire and other perils, professional aeronauts in the crowd were fascinated with the sight.

The daring Brazilian maneuvered to come down and began valving gas. He found he could not pump in air fast enough to keep his big sausage distended.

"All at once," he relates, "it began to fold in the middle like a pocket-knife." He fell swiftly. Looking below, he saw boys flying kites at Bagatelle. "Catch my guide rope and run against the wind," he shouted. They obeyed so well that his collapsing balloon acted like a kite and descended slowly. Santos-Dumont landed safely on the turf—his genius had saved him.

French CARICATURIST *Pictures* SANTOS-DUMONT—1900



ALBERTO SANTOS-DUMONT AS SEEN BY THE GREAT FRENCH ARTIST—GEORGES HUM

The celebrated Caricaturist of Famous Men watched Santos-Dumont in his Historic airship flights over Paris and vicinity and made this sketch of the Aeronaut. The original is in the possession of Santos-Dumont in his Collection of Aeronautica in Paris.

BRAZILIAN *Arouses Enthusiasm of the* FRENCH *Nation*—1901

THE GENIUS of Santos-Dumont captivated the hearts of the French people. His "Triumphant Day" arrived—and he astounded the world. Circling the Eiffel Tower in Paris and returning safely to St. Cloud, he won the Deutsch de la Meurthe Prize (October 19, 1901).

The young Brazilian set out at 2.45 P.M. from St. Cloud and, despite a mean side wind, he turned the Eiffel Tower in the ninth minute. He must make the round trip within thirty minutes to win. Against a quartering wind this was considered an impossible feat. A mighty throng was gathered at the Auteil race track and in the Bois de Boulogne. They cheered him to the echo as he skillfully managed his bucking aerial steed. Thousands held their breath as it pitched and tossed in the violent gusts.

And the doughty 110-pound Santos-Dumont won! Never losing self-possession or control of his airy craft for an instant—straight for the timekeepers he held its nose and crossed the finish line in just 29½ minutes from his starting time. He had won by 30 seconds! He won not only the Deutsch prize of 125,000 francs, which he divided between his own employees and the Paris poor—but the Paris Aero Club's "Encouragement prize" of 4,000 francs, also. This he donated to the Aero Club to found another prize. Later the Brazilian government gave him 125,000 francs and a beautiful gold medal.

This was Santos-Dumont's third trial around the Eiffel Tower. In his second he lost his No. 5 ship by an explosion on top of the Trocadero Hotel. His first attempt ended with aeronaut and airship in the top of a chestnut tree near the house of Princess Isabel, daughter of Dom Pedro of Brazil. She sent Santos-Dumont a breakfast in a basket and invited him to call. In a day or two she sent him a Medal of St. Benedict "that protects against accidents." He wore this constantly thereafter on a gold chain about his wrist. Coming through unscathed in a sequence of terrible mishaps, it seemed as if he bore a charmed life.

Santos-Dumont

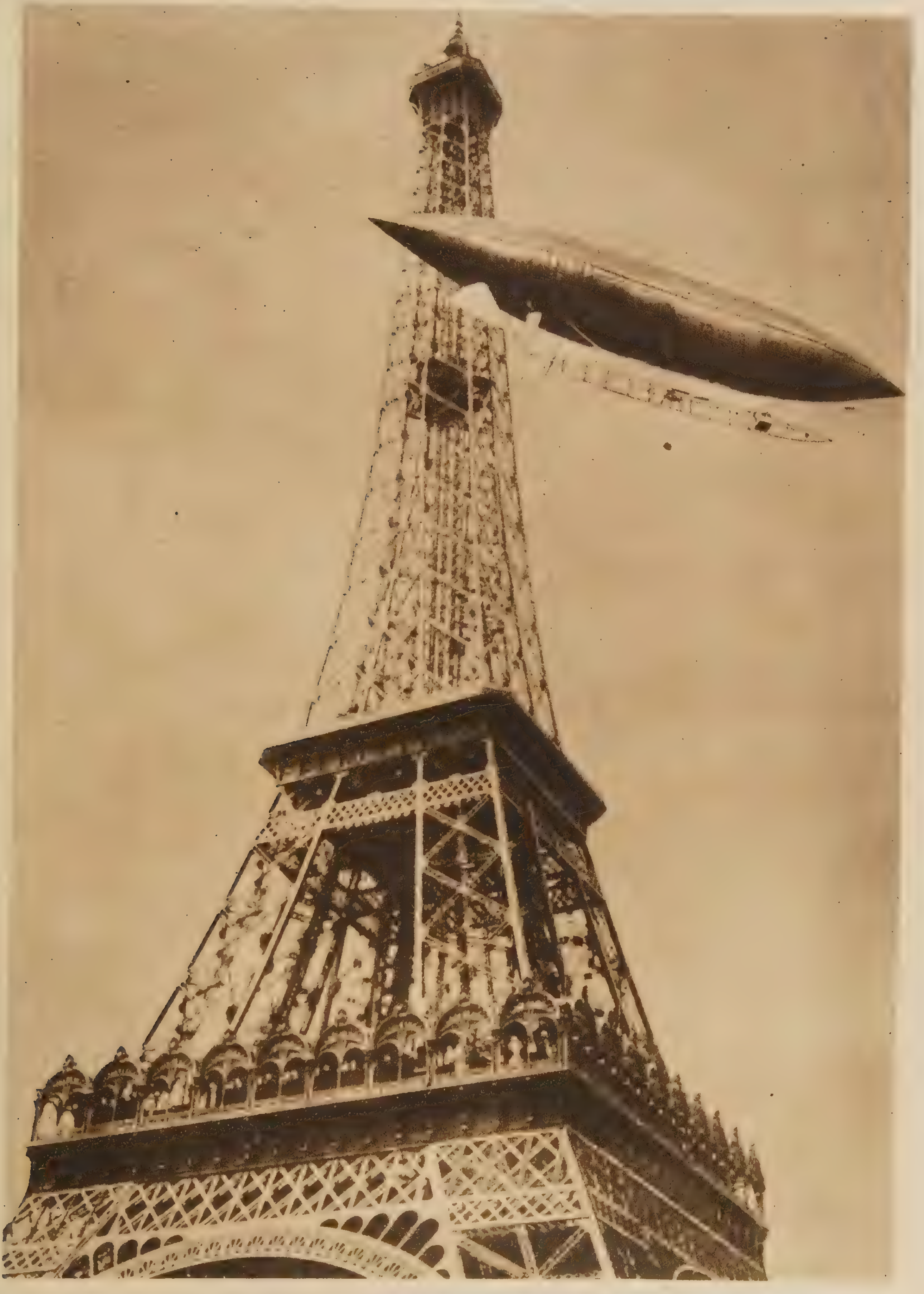
He Built and Flew FOURTEEN DIRIGIBLES.

We shall find the Brazilian later (1906) making the "First Airplane Flight in Europe."

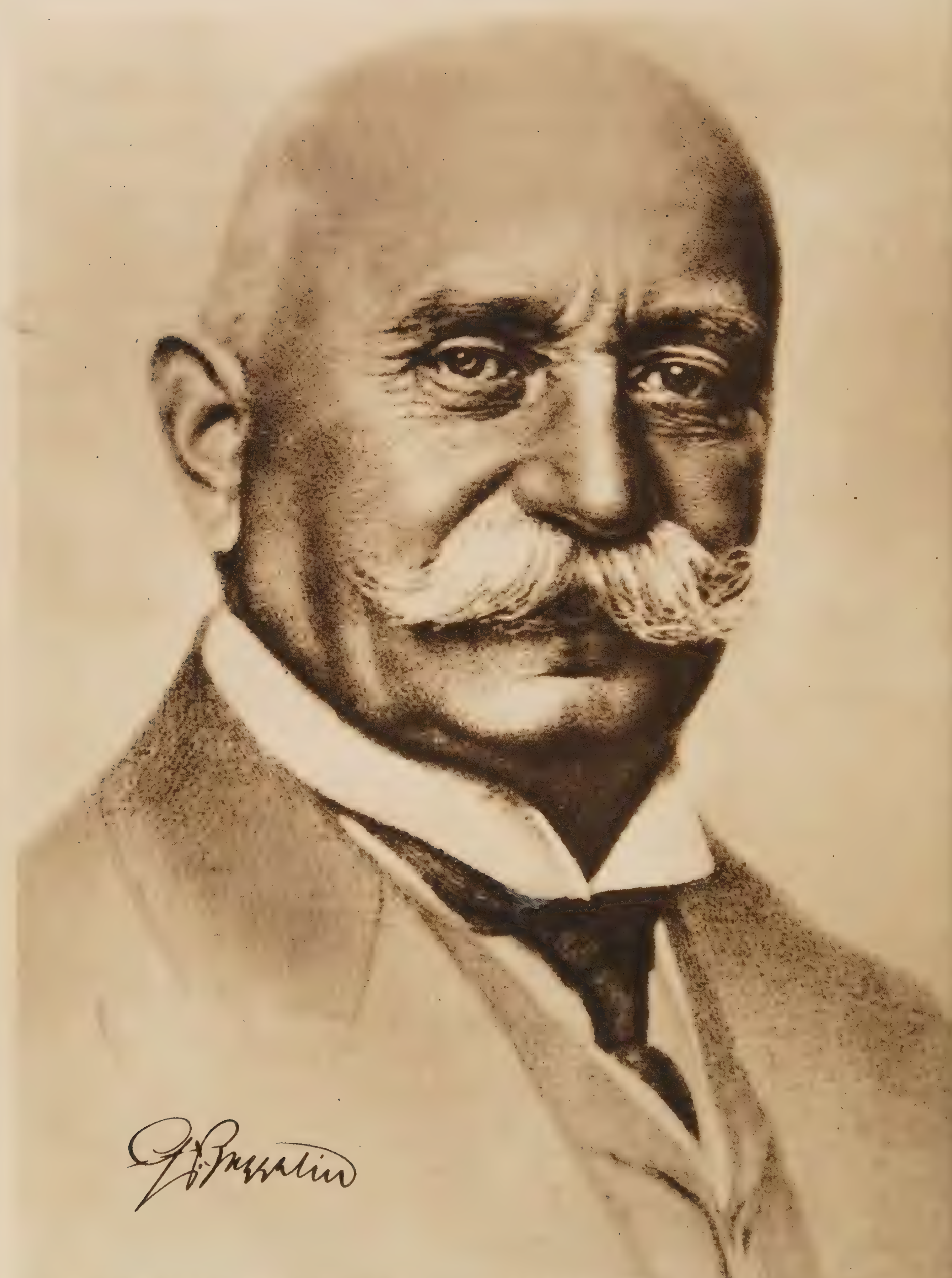
Photograph shows Dr. Samuel P. LANGLEY American Scientist, visiting Santos-Dumont in Paris (1899).

Exhibits in Collection of Santos-Dumont.

First AIRSHIP *to* NAVIGATE *Around* EIFFEL TOWER—1901



SANTOS-DUMONT WINNING DEUTSCH PRIZE AND WORLD FAME (October 19, 1901)



ZEPPELIN *of* GERMANY *Gives* AIRSHIP *to the* WORLD—1900

PART V

The MOMENT *of the* GREAT DISCOVERY

The SCIENTIFIC ACHIEVEMENTS *of* LANGLEY *and* ZEPPELIN

THE TWENTIETH CENTURY breaks upon a New World-in-the-Making. Inventions and discoveries are to revolutionize the whole social structure under which we live. Our habits, customs, and even our ethical and moral standards are to be forced to readjust themselves to this new state of creative evolution.

The coming of the "Aerial Age," which has been gathering momentum through the centuries, is but the inevitable sequence of events. Conquest of the land and sea could result in but one ultimate consummation—Conquering of the Air. This we are now to witness:

At the opening of the new century, Zeppelin of Germany, with his rigid Airship, makes the First Successful Flight over Lake Constance (July 2, 1900) and establishes the era of "Navigation by Airship,"which, in its sustained development, is soon to set up regular transportation across continents, oceans and around the world.

The historic balloon is beaten! It has held its position for 117 years since Montgolfier, but must now give way to the giant Zeppelin with its powerfully-driven motors and its scientific control in aerial navigation. Count de la Vaulx, in a magnificent demonstration of the balloon, makes a record-breaking long distance flight from France to Russia, 1193 miles in 35 hours and 45 minutes (October, 1900).

Germany breaks the altitude record with Professor Berson and Dr. Suring ascending from Berlin to an altitude of 35,425 feet (July 31, 1901); the First Crossing of the Mediterranean by Air is won by France (October 13, 1901); France comes forward with its Dirigible Airship and Santos Dumont wins the "Deutsch Prize" by a demonstration in navigation from St. Cloud around the Eiffel Tower and return (October 19, 1901). Lebaudy brothers launch their non-rigid dirigible, with 40 h.p. Daimler motor (1902), which two years later is to be accepted by the French War Department.

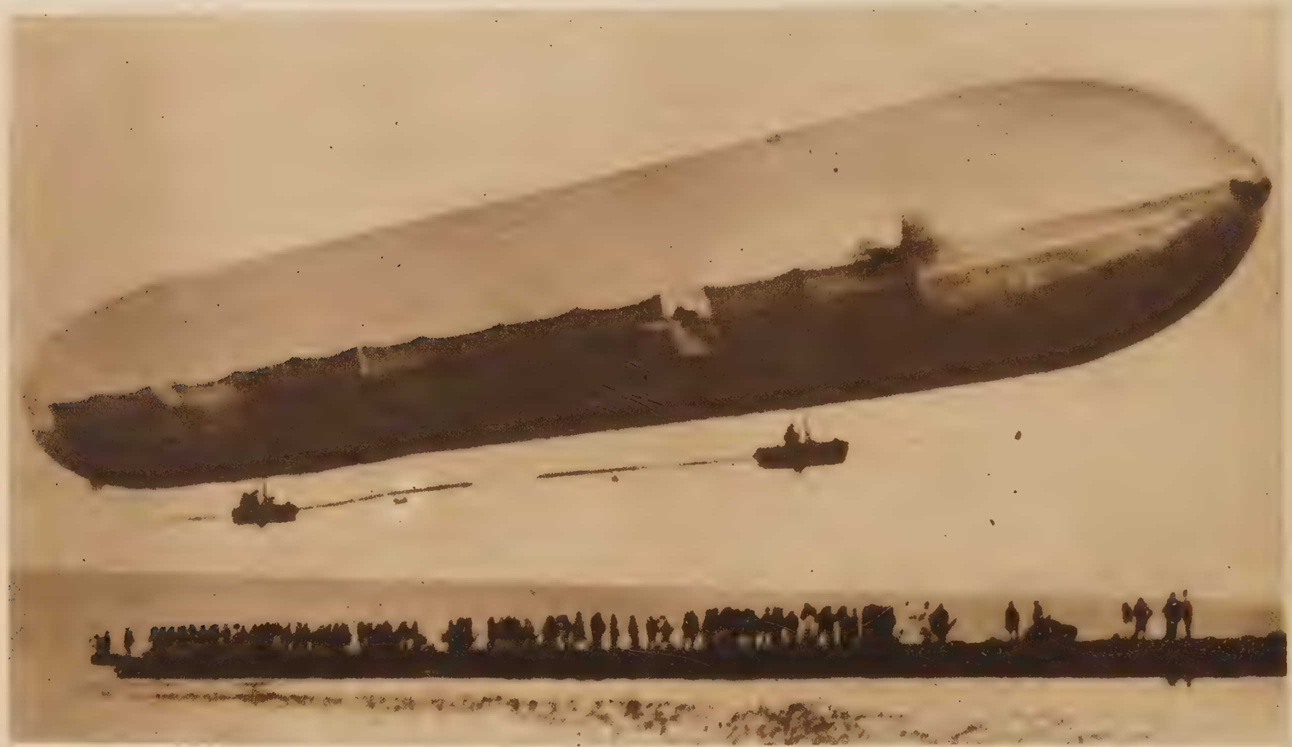
During this period the Boxer Insurrection arises in China and the French and English use Military Balloons in their campaigns against the Chinese; Chinese Balloons and stores fall into the hands of the Russians at the capture of Tientsin; while strong detachments of balloons are being used by the English in the Boer War in South Africa.

The Paris Exposition opens with its aeronautical exhibition; Queen Victoria dies; King Edward VII is crowned; the Pan-American Exposition opens in the United States and President McKinley is assassinated; Roosevelt begins his strenuous regime; Marconi signals the first wireless message across the Atlantic from England to Newfoundland; the Republic of Cuba is established; and the First International Arbitration Court is convened at the Hague.

In the Aerial combat the pendulum of destiny swings between two worthy rivals in America: Langley and the Wrights are poised for final action—Langley to make his last demonstration with his "Aerodrome" on the Potomac—the Wrights to answer the challenge on the historic sand dunes at Kitty Hawk.

It is a portentous moment in the tense human drama.

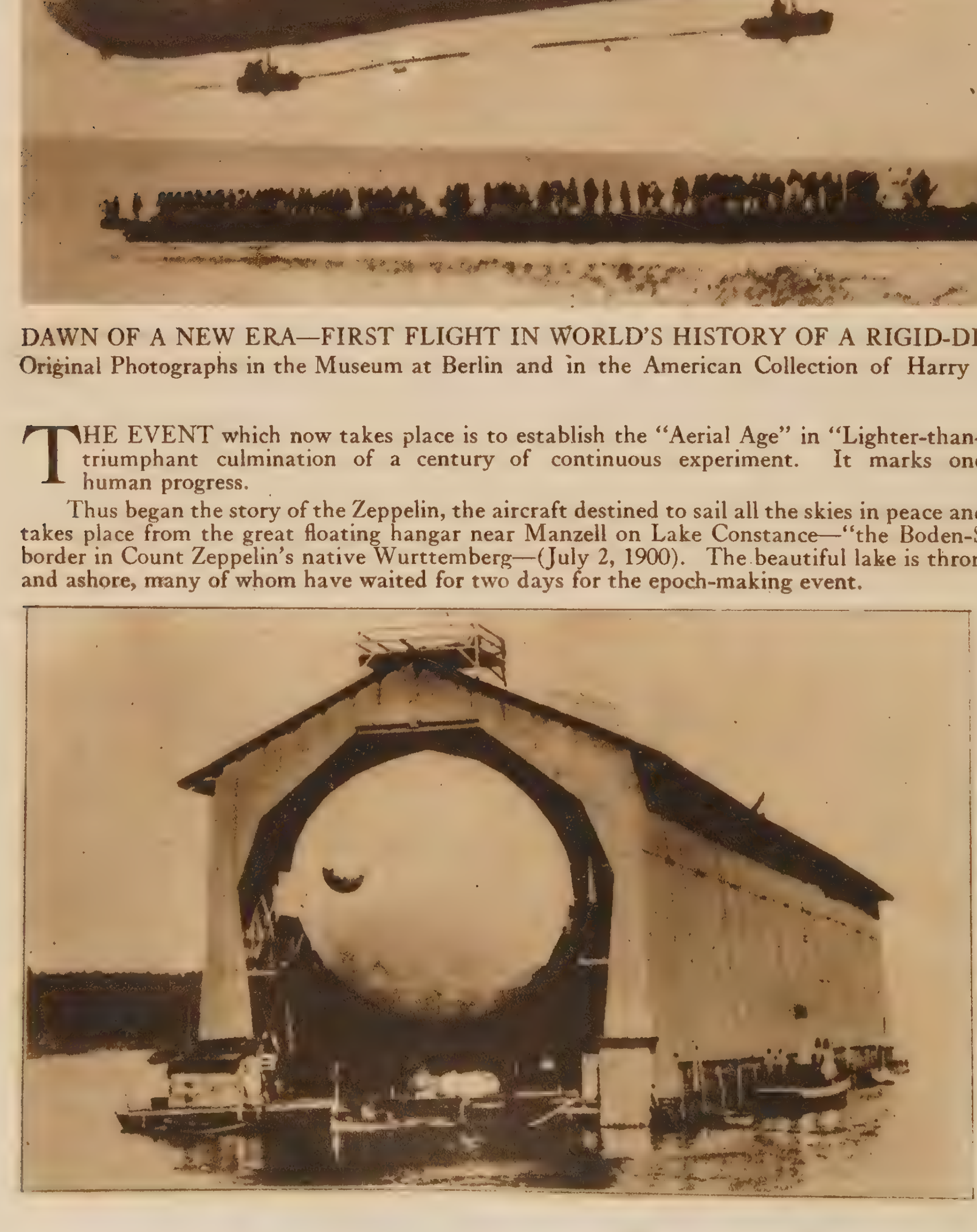
First ZEPPELIN *Airship Sails Over* LAKE CONSTANCE—1900



DAWN OF A NEW ERA—FIRST FLIGHT IN WORLD'S HISTORY OF A RIGID-DIRIGIBLE AIRSHIP
Original Photographs in the Museum at Berlin and in the American Collection of Harry Vissering in Chicago

THE EVENT which now takes place is to establish the "Aerial Age" in "Lighter-than-Air Transportation"—the triumphant culmination of a century of continuous experiment. It marks one of the great periods in human progress.

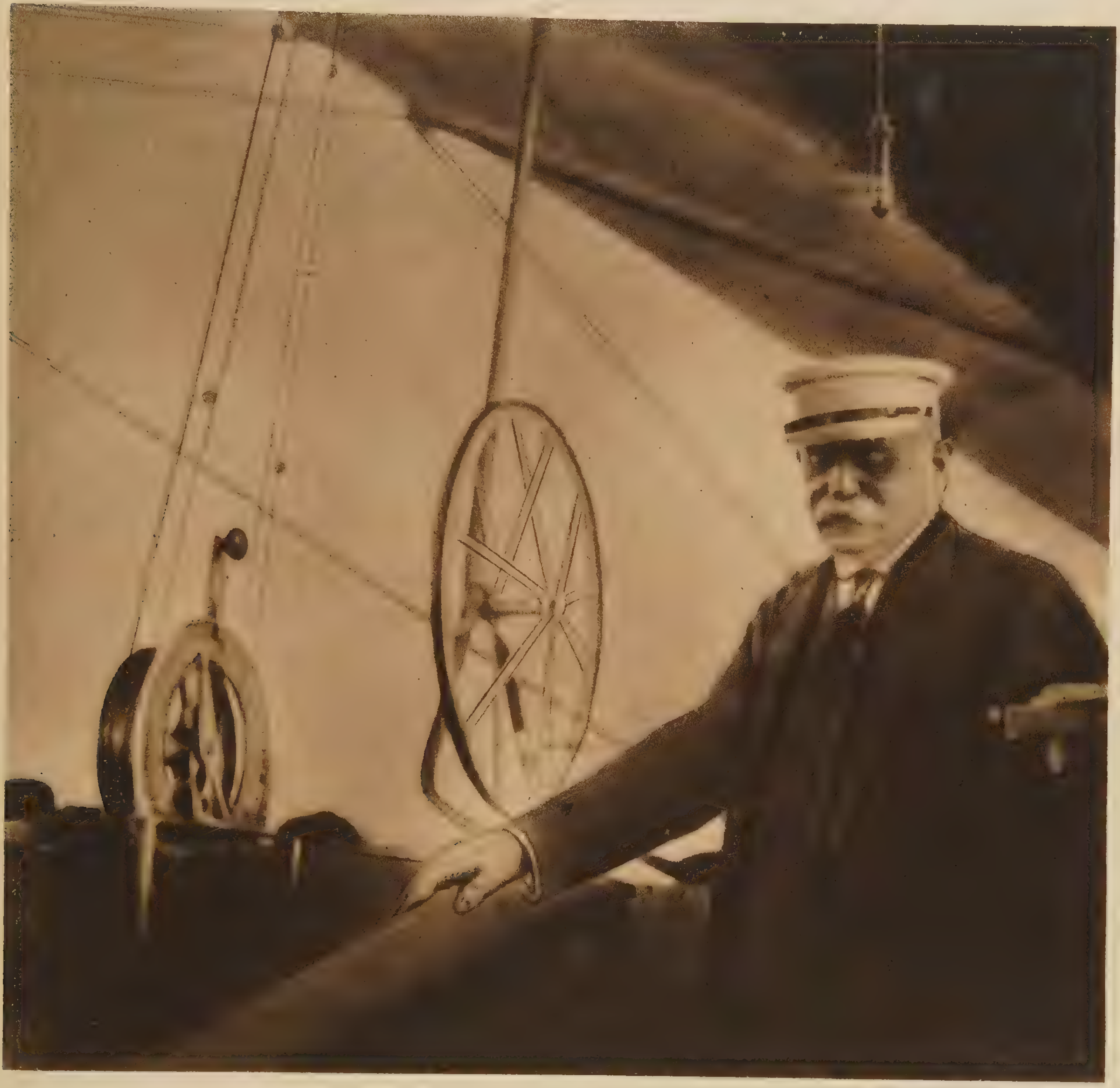
Thus began the story of the Zeppelin, the aircraft destined to sail all the skies in peace and war. The first launching takes place from the great floating hangar near Manzell on Lake Constance—"the Boden-See" on the German-Swiss border in Count Zeppelin's native Wurttemberg—(July 2, 1900). The beautiful lake is thronged with sightseers, afloat and ashore, many of whom have waited for two days for the epoch-making event.



It was a glorious adventure. The huge Zeppelin rose to an altitude of 1,300 feet and soared over Lake Constance for a distance of three miles and a half—amid wild demonstration. Count Zeppelin flew his great ship for twenty minutes, sailing along at 8 miles an hour—and landed her safely at Immenstadt.

There were critical moments on this first voyage. The control mechanism got out of order, the framework bent, and the two propellers did not function properly; but a second voyage was to overcome these difficulties. The historic Zeppelin is seen here in its hangar (left) on this historic day.

Count ZEPPELIN *at* WHEEL *in Epoch-Making* VOYAGE—1900



COUNT FERDINAND von ZEPPELIN (1838-1917), noted German Lieutenant-General of Cavalry and hero of the Franco-Prussian War, is one of the great figures in World history. His Second Voyage of the First Zeppelin Airship took place (October 17, 1900), three and a half months after the first trial.

This time the huge aircraft promptly rose to a thousand feet altitude from the floating hangar at Manzell, in a seven-mile wind. It was maneuvered at will by her 62-year-old inventor, who steered in wide sweeping curves above the blue waters of Lake Constance. She flew for an hour and a quarter, at a speed which sometimes rose to 20 miles an hour, and landed smoothly on the water—to be housed again without the slightest mishap.

Count Zeppelin had won! The historic Leviathan of the day was 420 feet long and 38 feet broad, with a full rigid frame of aluminum trusswork, covered with linen and silk treated with pegamoid. Inside the great hull she had 17 compartments, many of these holding balloonets in which she carried hydrogen gas. Two gondola cars swung below the great hull, each with a 16-horsepower naphtha motor. Each motor drove a pair of four-bladed propellers attached to the main framework. Vertical rudders steered her and horizontal rudders maintained equilibrium.

Count Zeppelin immediately became known at home and abroad for his epochal achievement in air navigation. Later we shall find him bringing out the First Dirigible to be adopted by the German Government (1908)—his fourth ship. In the intervening years he makes many improvements to his design. The gasoline motor is coming along fast in these years and that means as much to his aircraft as to the airplane. The rare photograph of the aerial pioneer navigating his Air Leviathan (above) is in the Collection of Brown Brothers.

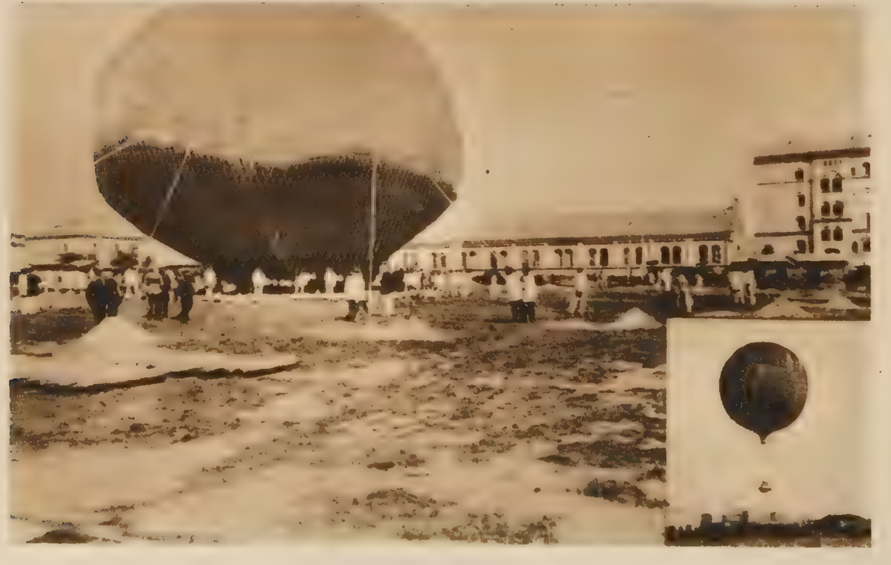
Lebaudys in FRANCE *Launch Semi-Rigid* DIRIGIBLE—1901

LEBAUDY BROTHERS WATCHING TRIAL FLIGHT OF THEIR SEMI-RIGID DIRIGIBLE BALLOON
Original Photograph in Lebaudy Collection in Paris and the American Collection of Paul Thompson

FRANCE, simultaneously with the Germans, launched its latest Airship—a semi-rigid development of the balloon. The Lebaudy Brothers, French sugar refiners, commenced the construction of this French Military Airship, the "Jaune" (1901). This is the first of a series of semi-rigid dirigibles which resulted from the great interest of these wealthy business men who engaged in the developments of aeronautics. An able engineer on their staff, M. Julliot, built the mechanical parts of these airships at their sugar refinery, while Surcouf, well-known Paris manufacturer of balloons, made the huge cigar-shaped balloon bags.

The Lebaudy Airships were of the semi-rigid type. Their long flexible hulls had broad rigid keels from which the car carrying machinery and passengers were suspended. The *Jaune* ("Yellow," because of the coating of lead chromate to ward off actinic rays of the sun from the rubberized cotton fabric of the envelope) was 183 feet long and 32 feet broad. She had a 40-horsepower Daimler motor and twin screws, and made 26 miles an hour.

Launched (June 1902), she was wrecked at Chalais-Meudon in November, but her motor was uninjured and went into the Lebaudy brothers' next ship, the "Lebaudy," of which we shall hear two years later (1904). In the group (above) the Lebaudy brothers are the central figures and Julliot is at the right of the picture.



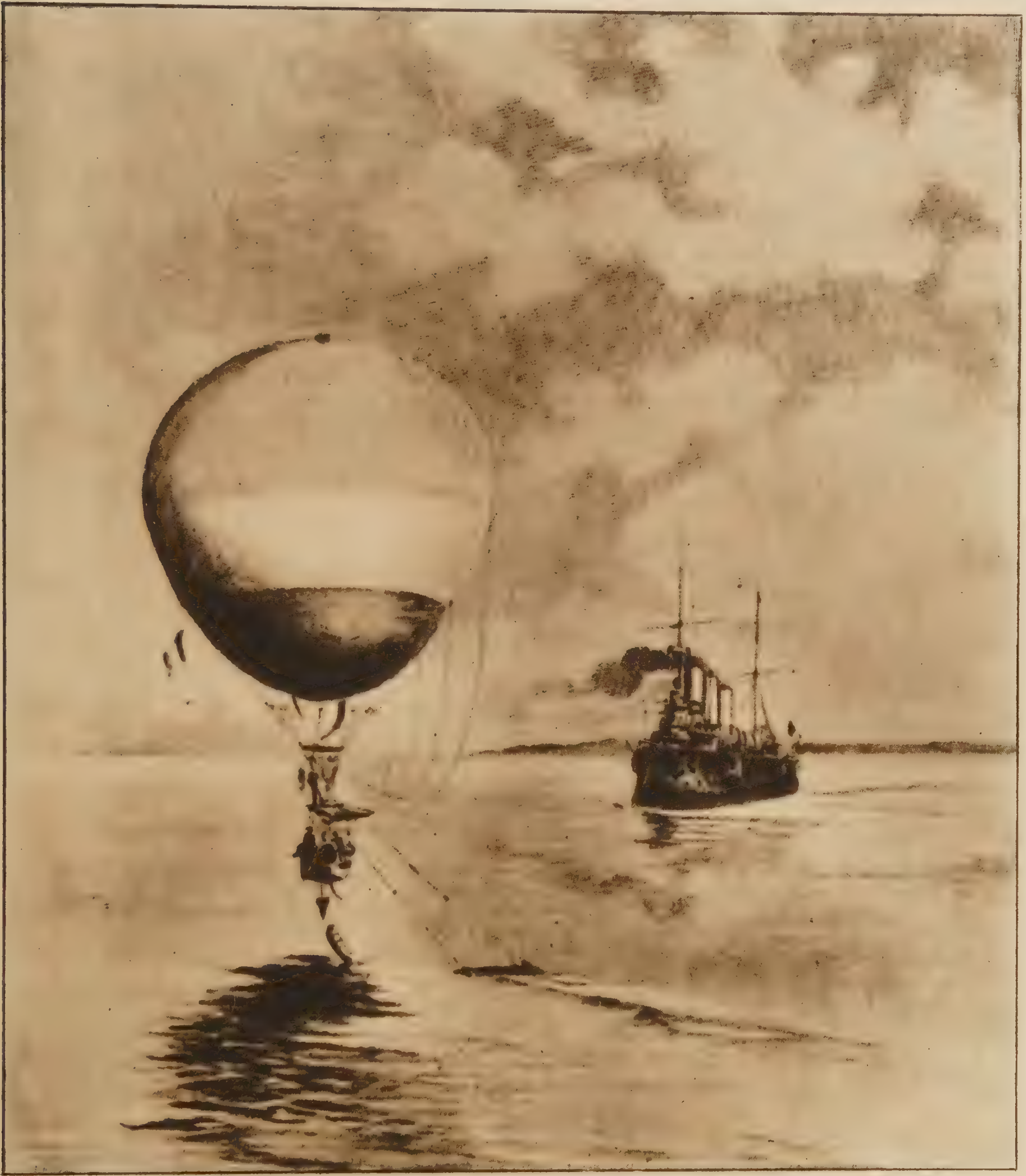
GERMANY BREAKS WORLD RECORD

Two German Scientists now rise to the highest altitude reached by man up to this date (July 31, 1901)—35,424 feet.

Dr. R. Suring, of the Royal Meteorological Institute of Berlin, and Professor Berson ascended seven miles above the earth in the great balloon *"Preussen."*

The German scientists carried oxygen tanks and their ballast sand bags were arranged to be cut free with a mere touch. They came down safely, bringing much important data. Composite photograph (left), in Dr. Suring's Collection, shows the huge balloon being inflated and just leaving the ground.

First CROSSING *of* MEDITERRANEAN SEA *by* AIR—1901



COMTE HENRI de la VAULX, distinguished Paris financier and aeronaut, was the first to make the dangerous crossing of the Mediterranean Sea in a balloon (October 13, 1901). With three companions—his friend Comte Castillon de Saint Victor, Lieut. Tapissier of the French Army Balloon Corps, and Henri Herve, engineer and inventor—Comte de la Vaulx set off at 6.30 A.M. from Toulon, near Marseilles, to cross the Mediterranean in his great balloon named in honor of that sea. The party landed safely in Algeria about 4 P.M. They were escorted on their perilous voyage by the French cruiser "Du Chayla." The year previous (October 9-11, 1900) de la Vaulx and Saint Victor had established a balloon distance record which stood for fourteen years—from Vincennes, near Paris, to Karoslychew, Russia, 1,193 miles in 35¾ hours. M. Herve was responsible for the canvas drag by which the balloon was maneuvered. The artist's sketch was made on the spot for "*L'Illustration.*"

LANGLEY *to Demonstrate* LAW *of* AERODYNAMICS—1903

GREAT AMERICAN SCIENTIST FACES HIS DECISIVE TRIAL
Dr. Samuel P. Langley (right) with his Chief Assistant, Charles M. Manly.

PRESIDENT McKINLEY, following the Spanish-American War, urged Dr. Langley to make his last great demonstration in the Conquest of the Air. McKinley saw the possibilities of aircraft in warfare. The Department of War, through its Board of Ordnance, appropriated $50,000 for Langley's Work.

For more than four years, Langley and Manly worked in private to produce a man-carrying Aerodrome which would sustain itself and remain controllable in the air.

A light internal combustion engine was essential. They contracted for a 12-horse-power engine to weigh not over 100 pounds. The maker could not deliver this.

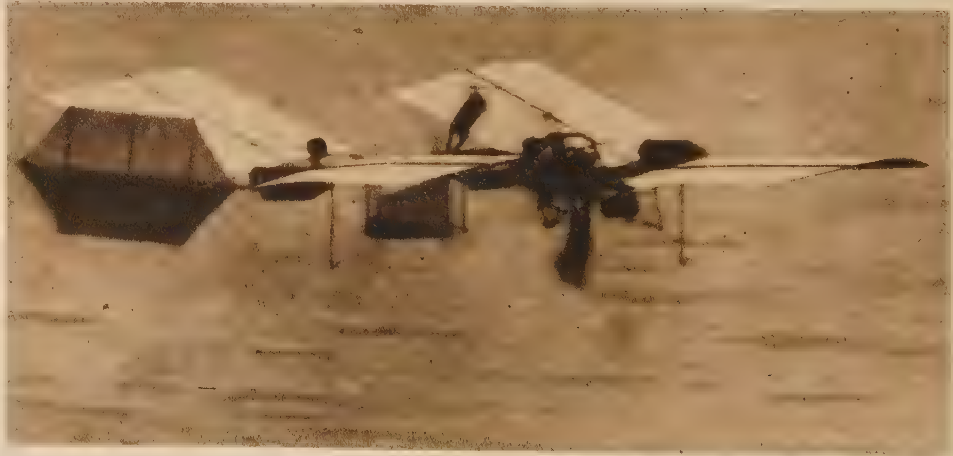
Manly in this emergency designed and built the "Father of all Radial Airplane Engines." It weighed 125 pounds and developed more than 52-horse-power at 950 revolutions per minute of the propeller.

Professor Langley and Assistant Manly are seen here together (left) on the roof of the Potomac river house-boat where construction is nearing completion (1903). The quarter-size Langley Model is seen in flight (below). The photographs are from Official Records of the Smithsonian Institution.

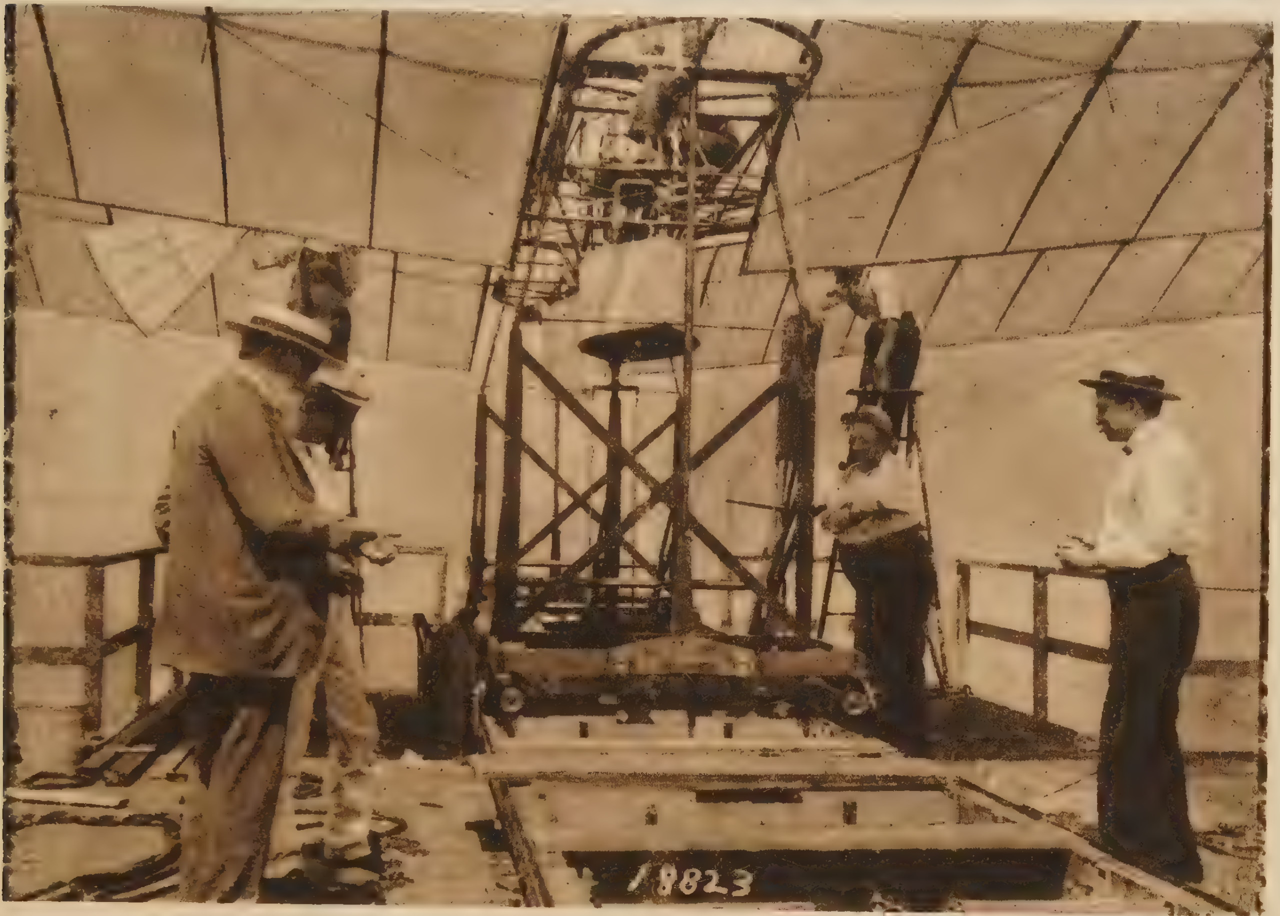
THE DECISIVE MOMENT has come! Langley is to win or lose in one of the most dramatic rivalries in all history.

He has now built a full-size, man-carrying machine—four times the size of his successful model (right).

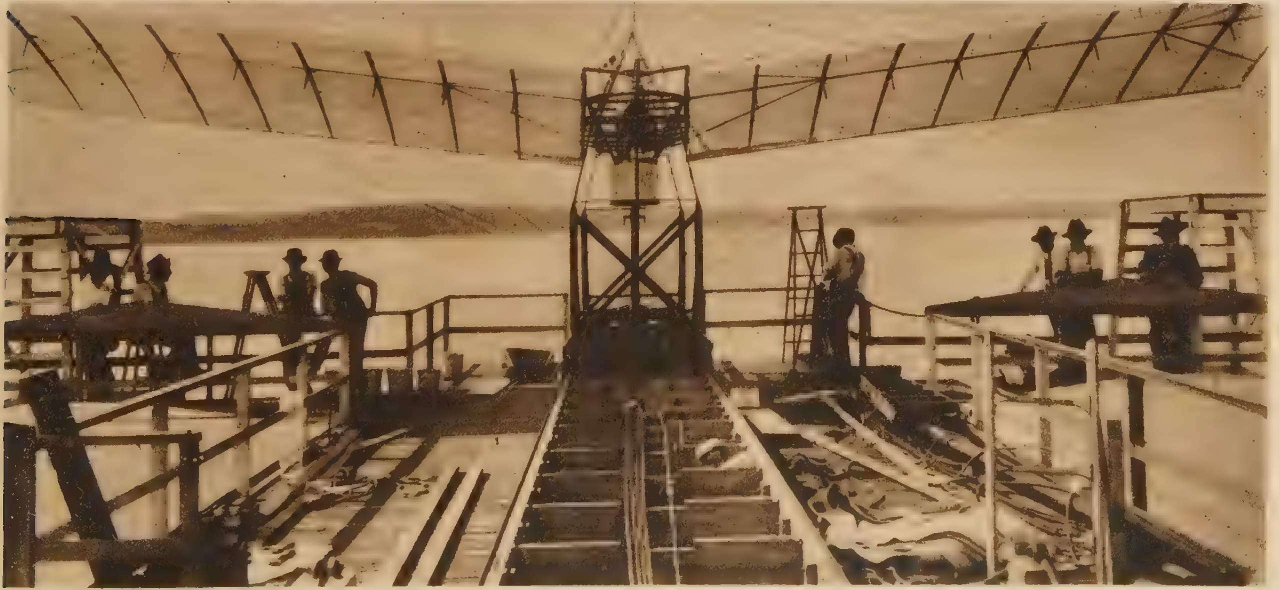
In this tandem monoplane, he purposes to carry a man in sustained and controlled flight, driven by a special gasoline engine.

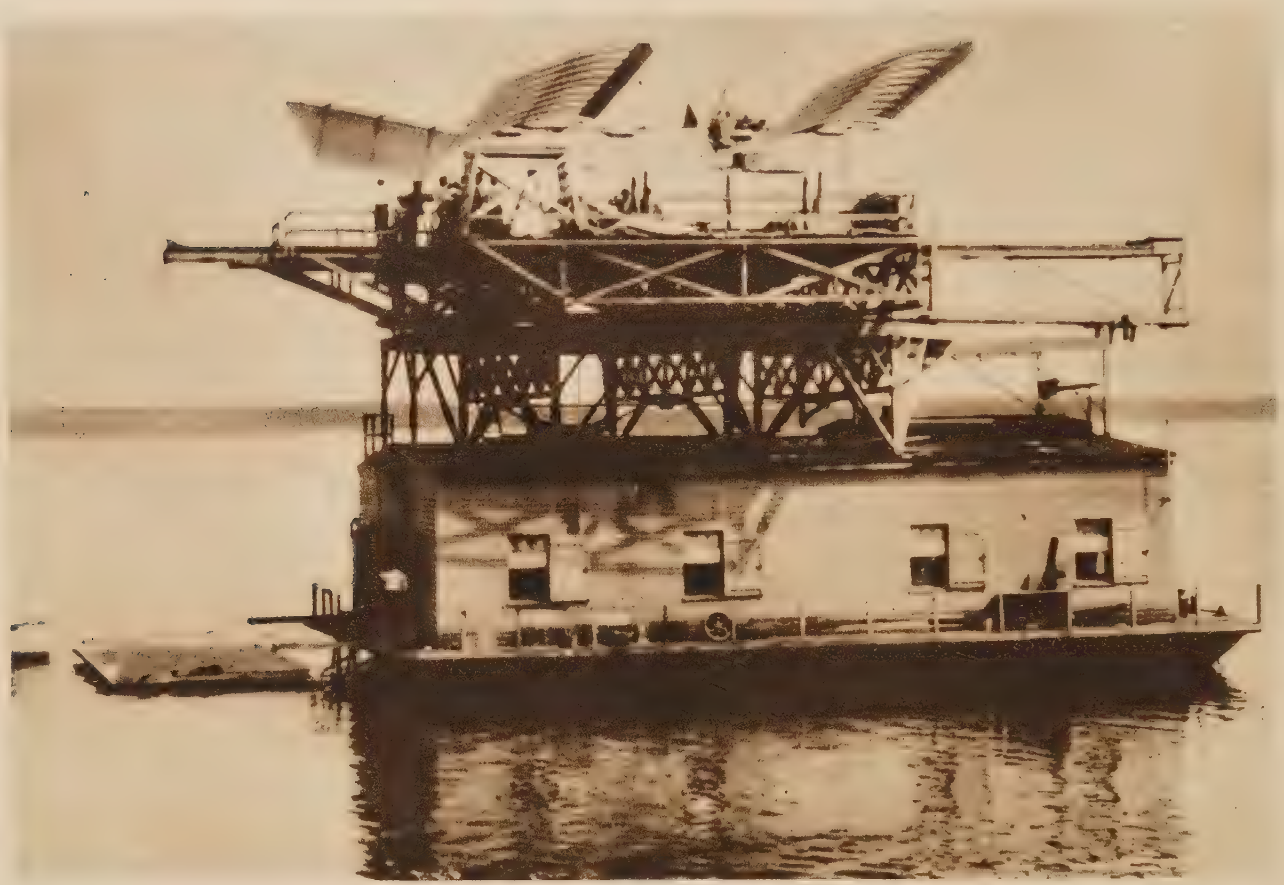


AMERICA *on Threshold of Another* GREAT DISCOVERY—1903



THE FAMOUS HOUSEBOAT ON THE POTOMAC where the great "Aerodrome" is being constructed on orders of the United States Government. Dr. Langley and Mr. Manly are seen in conference (left) over the knotty problems of the catapult mechanism on top of the Potomac River Houseboat, where Langley's "Man-Carrying Aeródrome" is nearing completion (1903). Others in the picture are construction assistants on this historic work. We see (below) the partly finished "Aerodrome" drawn back on the now completed catapult. Both photographs are from Official Records of the Smithsonian Institution, which Dr. Langley directed during all his work in aeronautics.





READY FOR ACTION—THE FIRST TRIAL FLIGHT OF THE HUGE LANGLEY "AERODROME"

THE GREAT Langley "Aerodrome" is completed. The day has arrived for the First Trial Flight (October 7, 1903). The powerful tandem Monoplane stands on top of the Houseboat on the Potomac River—drawn far back on the catapult—ready to start.

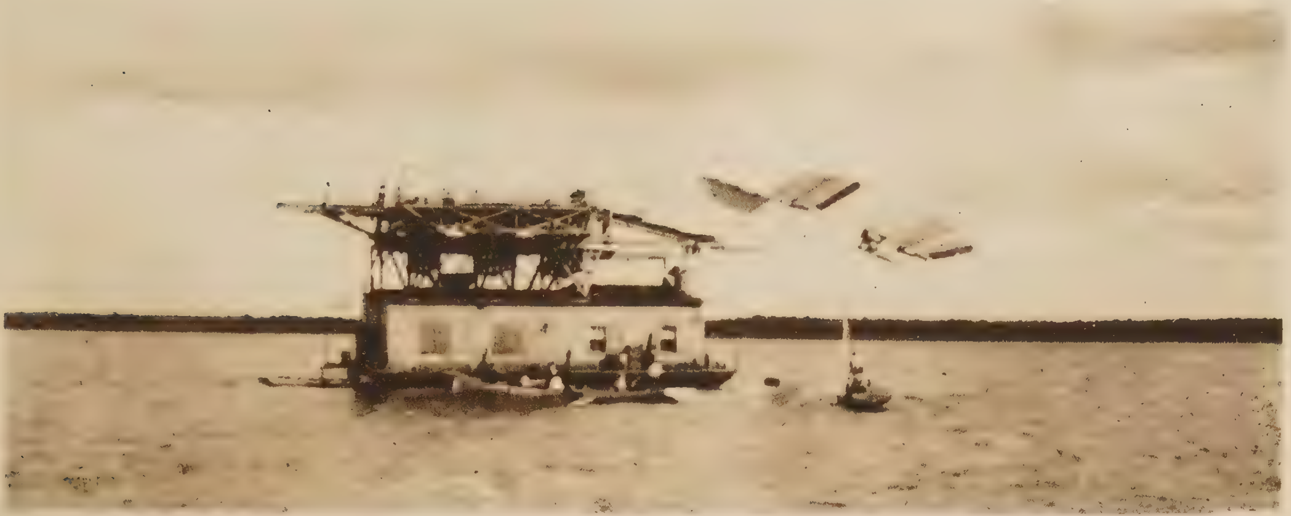
Manly, the scientist-inventor's assistant, steps aboard. His light trousers and white canvas shoes are spotless. He carries a life preserver and a pair of automobile glasses. In two tugs nearby are members of the Smithsonian staff, while other craft are filled with photographers and newspaper reporters, who have been at Widewater for weeks. The labors of more than four years are over. The result is about to be put to the test.

Manly signals—an axe cleaves the retaining cable—the catapult car trundles forward—the propellers of the "Aerodrome" whirr smoothly at a thousand revolutions per minute—the great monoplane shoots forward off the catapult. (See Official Photograph on opposite page). The spectators hold their breath in excitement. In an instant they see that the great man-made bird is *not going up! It is headed for the water!*

And the great Flying Machine plunges into the Potomac. The smoothly running engine and whirring propellers sink beneath the water. The spectators are shocked—when suddenly it rises again and floats. Manly is uninjured and is rescued from the river. The First Trial Flight has met with an accident.

We quote from the official report of Major M. M. Macomb of the Artillery Corps, who represented the War Department at the trial flight: "The trial was unsuccessful because the front guy post caught in its support on the launching car and was not released in time to give free flight, as was intended, but, on the contrary, caused the machine to be dragged downward, bending the guy post and making the machine plunge into the water about fifty yards in front of the houseboat. The engine was uninjured and the frame only slightly damaged, but the four wings and rudder were practically destroyed by the first plunge and subsequent towing back to the houseboat. This accident necessitated the removal of the houseboat to Washington for the more convenient repair of damages."

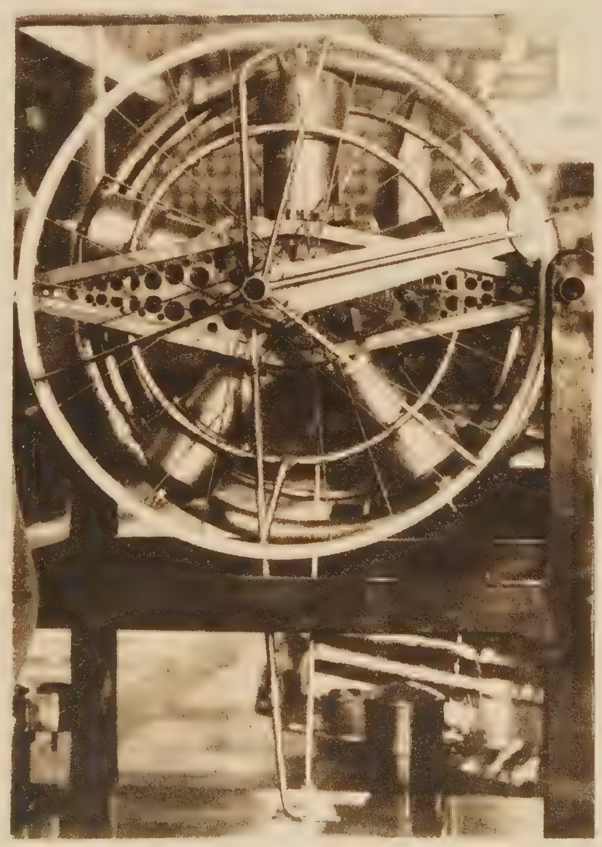
OFFICIAL *Photographs in Government Archives at* WASHINGTON



OFFICIAL PHOTOGRAPH OF LANGLEY'S "AERODROME"
AS IT PLUNGES INTO THE POTOMAC,
OCTOBER 7, 1903

LANGLEY and his fellow scientists were more confident than ever that they had established the principles of aerodynamics—barring minor accidents—and that the Second Trial Test would prove successful. Back once more in Washington, the distinguished scientist known throughout the world for high achievement in the sciences, was buoyed up by the conviction that the model machines of seven years before (1896), which made repeated flights of from one-half to three-quarters of a mile, would be followed by the successful flight of his full-sized man-carrying aerodrome.

With full confidence, they began to rebuild the big machine and refit it to do what they were sure it could do—achieve power-driven, controlled flight with a passenger. Two months later came the second chance to prove this out—the following pages will record what occurred.



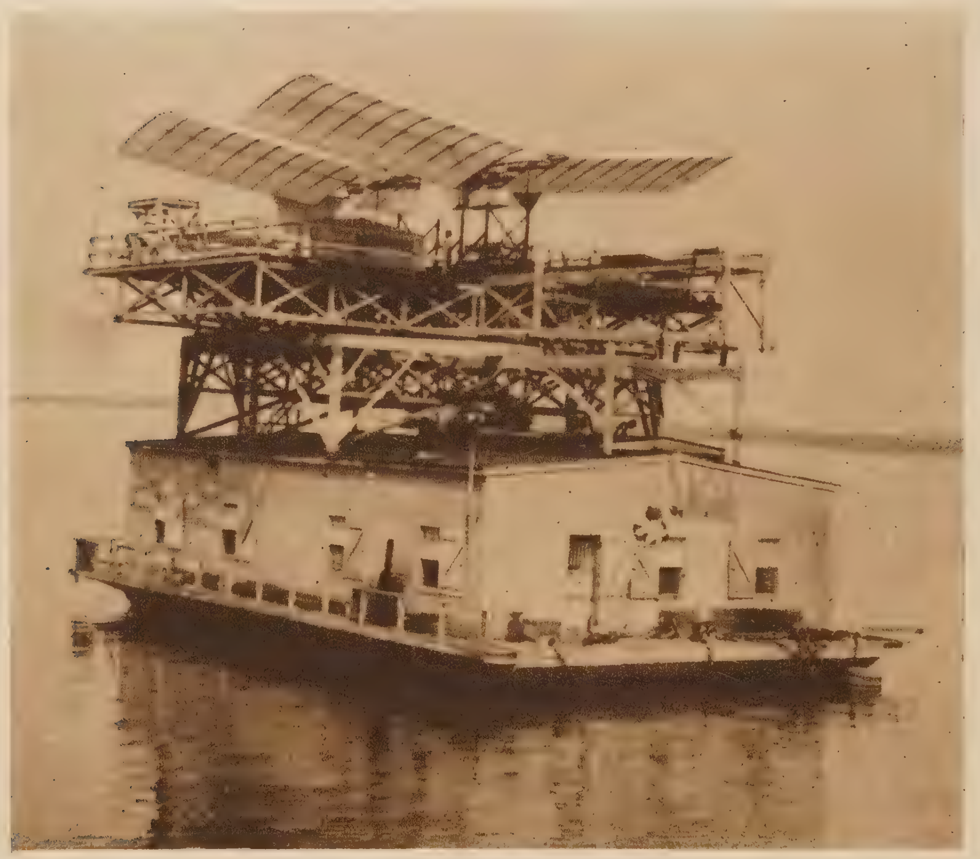
MANLY'S
ENGINE
MARVEL

Five
Cylinder
RADIAL
GASOLINE
MOTOR

Built
for
LANGLEY
AERODROME
And used
in the
TEST
FLIGHTS

Exhibited
in the
NATIONAL
MUSEUM

Critical Moment—Ready to START—*On the* CATAPULT—1903



LANGLEY AERODROME AGAIN FACES CRUCIAL TEST
Official Photographs in the Smithsonian Institution at Washington.

THE man-carrying Langley Aerodrome is ready for its second trial flight (December 8, 1903).

Despite all, and against the advice of his friends and his physician, the brilliant and persevering scientist, now in his seventieth year, has gone on, with Manly by his side.

They and their faithful band of workers have spent weeks in re-conditioning the big Langley machine. The crisis in the life of the great scientist had arrived. He was now to be the first man in the world's history to solve the problem of aerodynamics—or he was to meet with disaster.

The hopes of a multitude of well-wishers were with him.

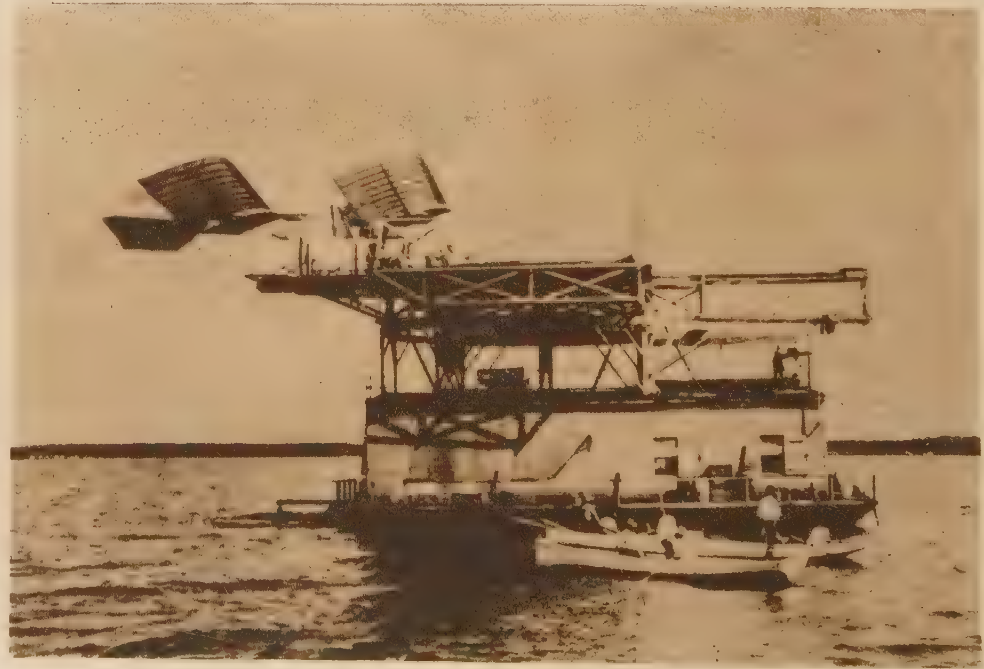
A second time the official party goes to the houseboat, for the final trial.

This time it is stationed just across the Potomac River from the city of Washington, near Anacostia and not far from where Uncle Sam's Army and Navy in after years were to establish great flying fields.

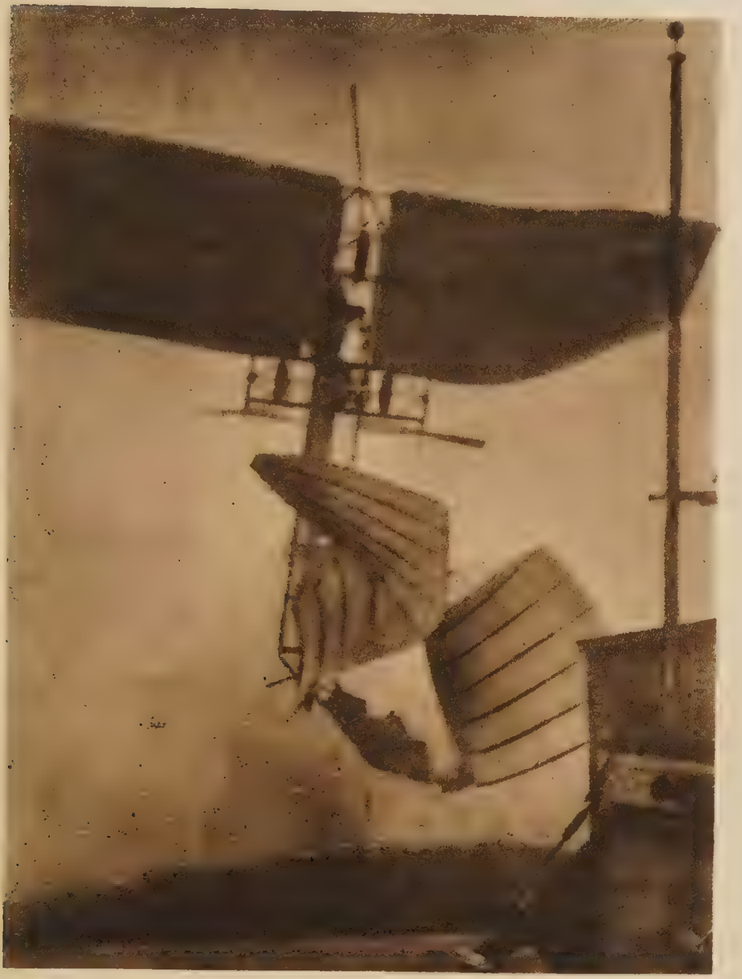
General Randolph is with Major Macomb to represent the War Department's Board of Ordnance, aboard the tug "Bartholdi" nearby. Newspaper men and photographers gather about.

There is neither nervousness nor doubt on board the houseboat. A fair chance is all the group ask of fate. It takes several hours to make everything ready. The wind is raw and gusty. The December sun is low when the great Aerodrome is finally drawn far back on the catapult.

POISED ON CATAPULT READY FOR TRIAL FLIGHT (BELOW)



Accident to Mechanism—AERODROME *Falls*—*December* 8, 1903



THE DISASTER IN THE AIR
Official Photograph in Smithsonian Institution at Washington
Towing away the wreckage (below).

THE DAY OF DESTINY—(December 8, 1903). The sun lies low behind the City of Washington, across the Potomac. The harsh north wind is still high.

Langley, Manly and their aides, ready at last for the flight which is to climax their faithful labors, are agreed that the great Aerodrome's final trial must not be postponed.

It is 4:45—the sun is down. Manly boards "The Ship of Fate" and adjusts controls. He starts the perfect-running engine—the twin propellers whir smoothly. The cable is cut. The catapult car glides forward. For a moment all goes splendidly—the huge bird gains headway—its forward planes take the air!

Suddenly, just as it is leaving the houseboat, there is a grinding, rending crash. The Aerodrome shoots off the catapult with rear wings crumpled and the tail a wreck!

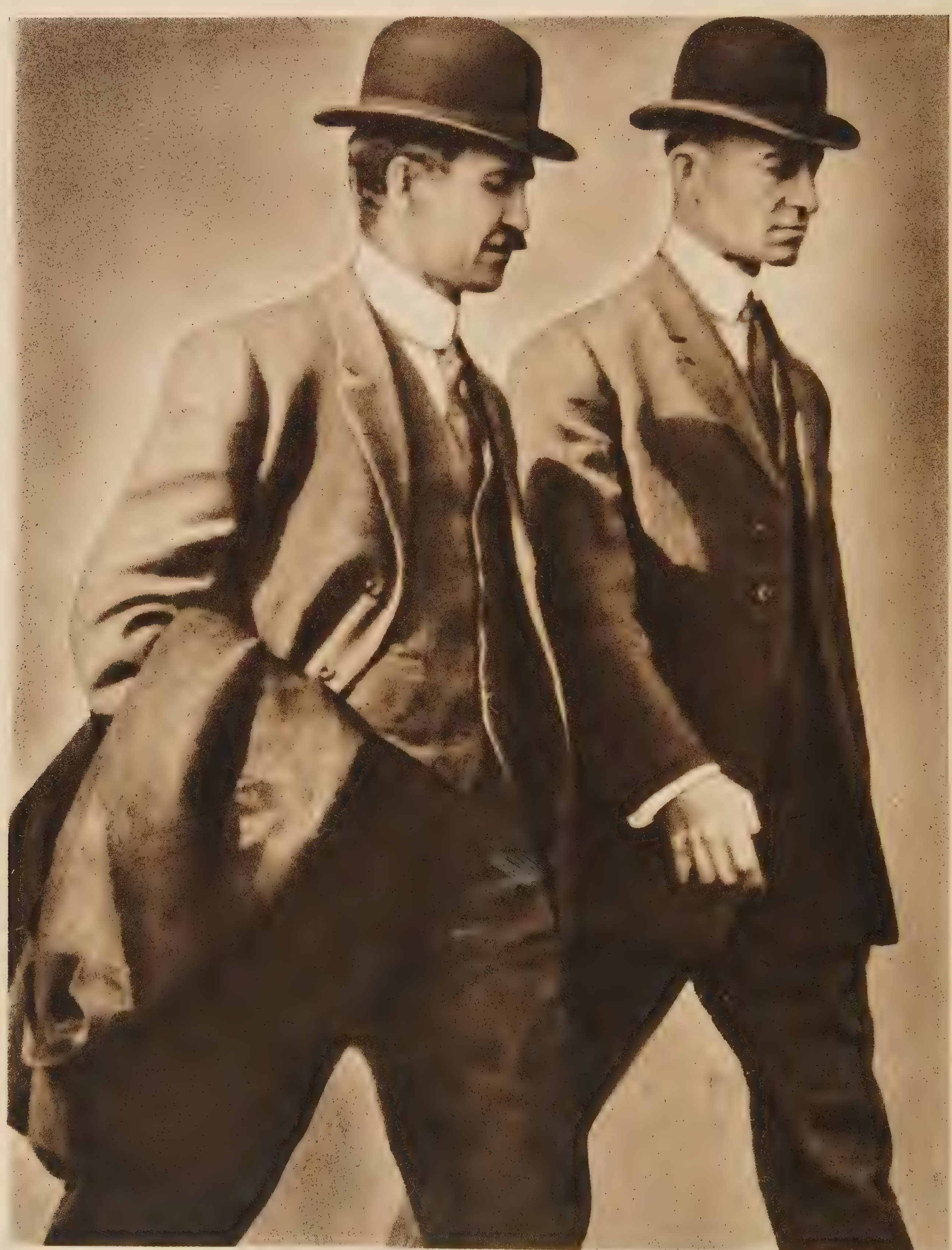
For seconds the wounded plane hung poised upright, as the sturdy motor and front wings strove valiantly to fly—then it toppled backward into the river before the houseboat.

Under water, Manly's life preserver caught fast as he tried to dive from the wreck—he tore it in two and swam to the surface, thrusting aside floating ice. The houseboat bore down on him, but his shouts were heard and a rowboat rescued him.

What happened has been a subject of dispute for a quarter of a century. "The fact remains," says Major Macomb's official report, "that the rear wings and rudder were wrecked before the machine was free of the ways."

This was the end. The wrecked Aerodrome gathered dust while Dr. Langley turned to his other scientific researches. Three years after, on his deathbed, came belated recognition from the Aero Club of America.

WRIGHTS *to the* FRONT—*To Solve* PROBLEM *of the Ages*



PART VI

BIRTH *of* NEW AGE—WRIGHTS *in the* AIR

MAN'S VICTORY *Over the* ELEMENTS *After* 5000 YEARS

THE CONQUEST is won—and the victory belongs to the Wrights! The momentous day is December 17, 1903. The "First Successful Flight in the World's History of a Power-Driven, Man-Carrying Airplane" takes place in America—at Kitty Hawk, on Kill Devil Sand Hill in North Carolina.

Events which we are now to observe mark the birth of the New Age—the culmination, as we frequently have stated, of more than 5,000 years of man's continuous struggle to emancipate himself from bondage to the earth and extend his dominion into the air.

The Wrights brought to practical achievement the efforts of thousands of courageous and far-visioned men for more than fifty centuries. From the first records of man's aspiration for human flight, on the seal cylinders of Babylon (3,500 B.C.) to the triumph at Kitty Hawk (1903 A.D.) is a ceaseless battle against the elements.

We have seen how the genius of man has kept persistently at the solution of the problem; how many of the greatest figures in history have directed their attention to its accomplishment; how the nations of the world have contributed to it. We now establish the historical position which Wilbur and Orville Wright will occupy.

The Wrights accomplished the hitherto "impossible"; they did what many men *almost* succeeded in doing—but what all other men failed to do. What Montgolfier did with the balloon—what Zeppelin did with the airship—the Wrights did with the airplane—and thus inaugurated the "Aerial Age."

This in no way detracts from the invaluable services rendered by the scientists and inventors who preceded them. Each made his own experimental contribution—but the Wrights were the first to achieve human flight in a power-driven "heavier-than-air" machine—413 years after Leonardo da Vinci's first design for a Flying Machine—and furthermore were to sustain that flight through the years, until today the "World in the Air" is an actuality.

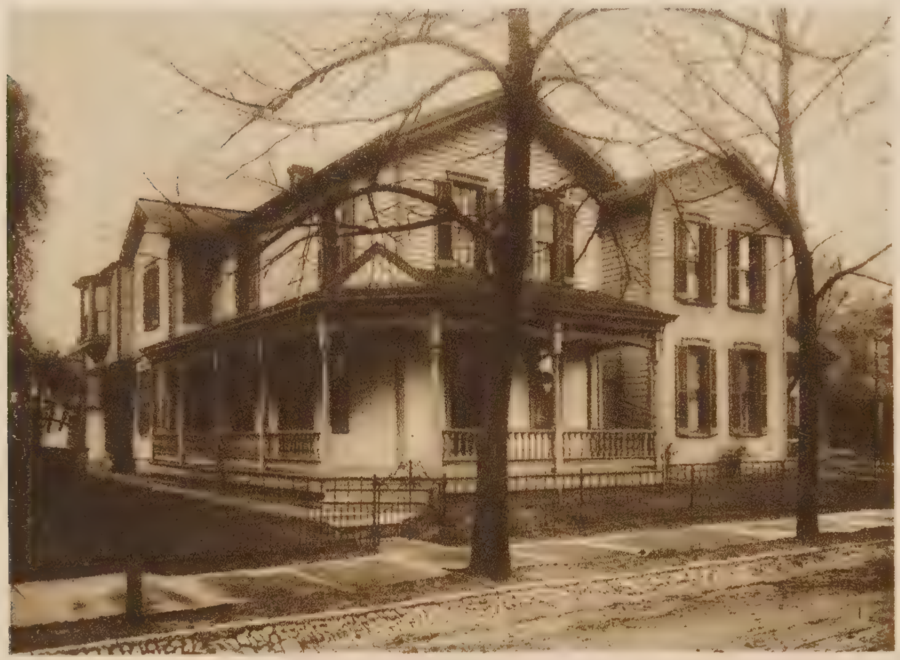
This position is granted to the Wrights by all nations. Europe has extended its tribute; France has erected a monument to the Wrights; England has placed the historic plane in the British Museum; the United States has awarded its medals and honors and marked the place of the epochal event with a memorial.

We present in these pages the official photographs in their true historical perspective, with the complete records of the origin and development of human flight and how it has been attained, together with the successive episodes which are taking place today.

Like Watt with the steam-engine; Fulton with the steamship; Stephenson with the railroad; Morse with the telegraph; Bell with the telephone; Edison with the electric light, the Wrights stand with the airplane—each with the cumulative knowledge of science behind him.

The "Aerial Age" is here—time and space are being practically eliminated, and the whole world is being brought into a brotherhood of nations—all as the direct result of the momentous events herein recorded.

An AMERICAN LANDMARK—HOME *of the* WRIGHTS



THE WRIGHT BROTHERS' HOME

Photographs from the Wright family mementoes in the Brown Brothers Collection.

THIS REAL AMERICAN HOME is the background of the achievements of Wilbur and Orville Wright. Their father was Bishop Milton Wright of the Church of United Brethren of Christ, a man with keenest interest in the scientific progress of humanity. In the Wright family there were two older sons, Reuchlin and Lorin, and their sister, Katherine, was the baby.

Orville Wright was born in the home (above) in Dayton's West Side (August 19, 1871), and Katherine was born here. Wilbur Wright was born at Millville near New Castle, Indiana, four years earlier (April 16, 1867). Their mother, Susan Wright, died during their early childhood.

Bishop Wright returned home from out of town one evening (1878) with a gift for the children. He tossed into the air a toy "helicoptere," which the Wright boys promptly dubbed a "bat." It sailed to the ceiling and they caught it as it dropped—an ingenious affair of cork and bamboo, covered with tissue paper, with two propellers operated by twisted rubber bands.

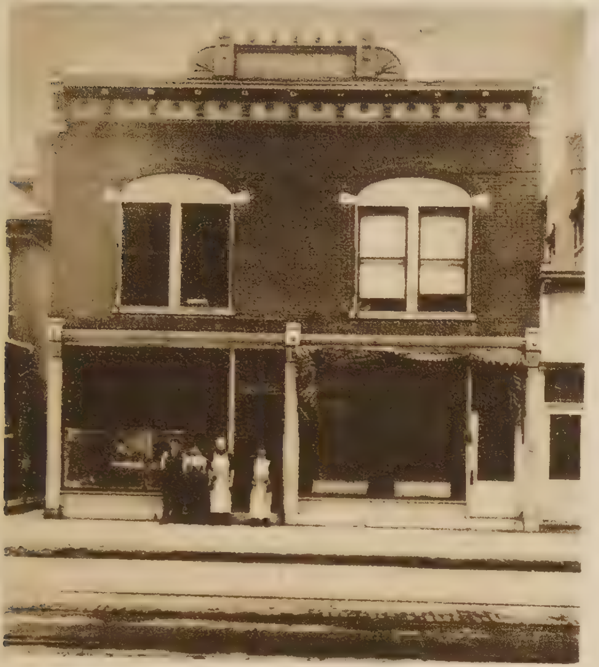
This soon was lodged permanently in a treetop, but Wilbur and Orville built others like it. They made each larger than the last—and the larger they were, the less they flew. The boys could not understand this. Principles of aerodynamics were involved of which even the most learned scientists of the day knew little. Finally, the young Wrights gave up "aeroplanes" and went back to making and flying kites.

The older Wright boys went to college, as did Katherine—but Wilbur and Orville were for a more active life and only finished high school. Their ambition was "to make things and to be out-of-doors."

With home-made tools, Orville did a crude wood engraving. His father presented him with a book on the subject; his brothers bought him a set of real engraving tools.

Orville and Wilbur built a printing press—of parts from scrap heaps of Dayton print shops. Its flat bed was a discarded tombstone. They printed a four-page weekly paper but it did not thrive. They later published a neighborhood daily, the "West Side Evening Item," which lasted four months.

Where FIRST *Successful* AIRPLANE *in* WORLD *was Built*



SHOP OF WRIGHT BROTHERS
Family Photograph in the Brown Brothers Collection

HERE Wilbur and Orville Wright, organized the Wright Cycle Company, and made the Van Cleve bicycle (1890s), a superior machine of the "safety" type, named after Bishop Wright's grandmother, Catherine Van Cleve, one of the hardy company which founded the city of Dayton a century before.

Across the street was their job-printing office, established (1893) as the logical sequence of earlier experiences. Here they produced a local magazine, "Snapshots," with a satirical skit each week by Wilbur. They did a prosperous business, but wished to branch out—hence the bicycle factory.

Orville lay in bed with typhoid fever when the shocking news of the death of Otto Lilienthal in a gliding accident in Germany (1896) was read to him by his brother Wilbur. Again their minds were set on human flight. They discussed Lilienthal's accident, threshing it out as they did every subject—to reach some conclusion agreeable to both.

In their home library was a book on bird flight, "Animal Mechanism," by the French authority, Marey, which they had read repeatedly. Wilbur got this and read it aloud. They endeavored to find other books on attempts of humans to fly, but could not locate them in Dayton. Orville was now convalescing, and they decided to take up gliding experiments in America.

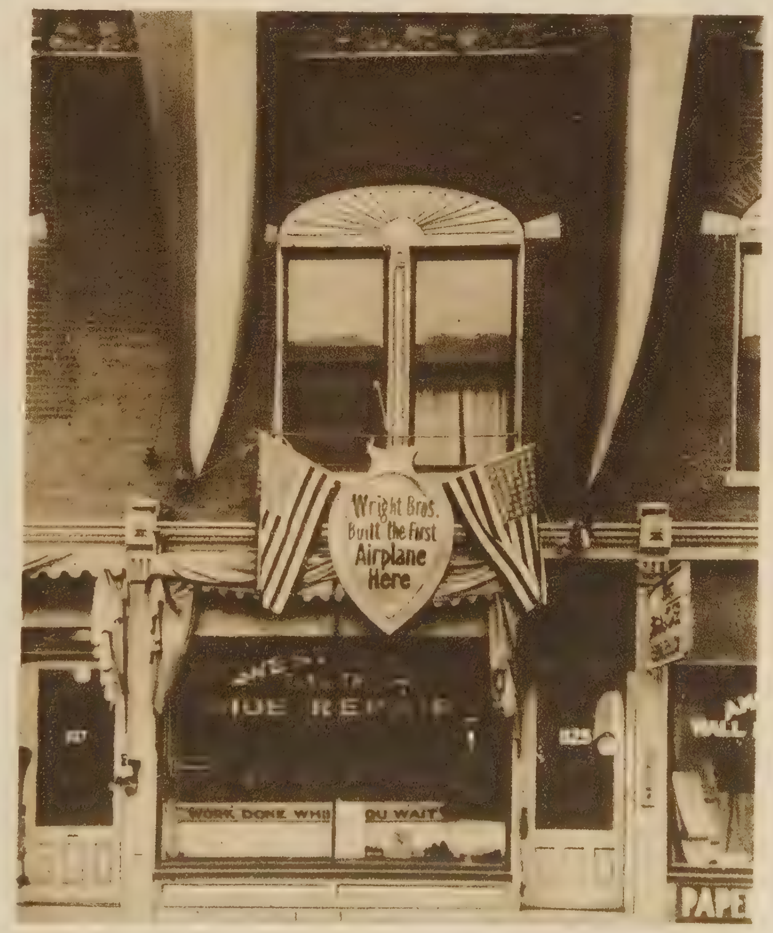
The Wright brothers constructed their first glider kite (1899) on entirely original principles. Its design was worked out in lengthy discussions between the two brothers and its parts built in Dayton.

Three years after Lilienthal's death they wrote the Smithsonian Institution at Washington asking the names of the best books on the subject. Octave Chanute's "Progress in Flying Machines" headed the list received.

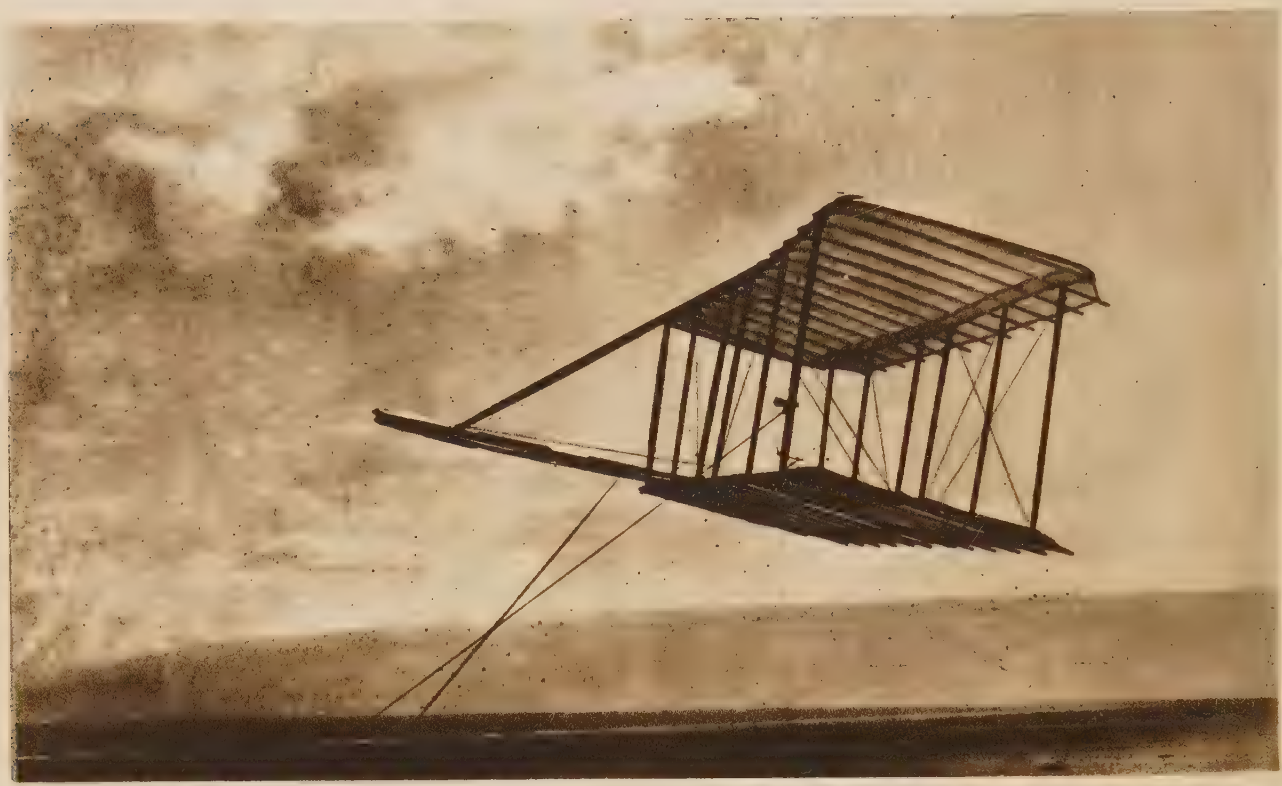
As their aeronautical library grew, contradictory theories and disagreeing data multiplied. Eventually they had to discount much that others believed they had learned about flight, and in the end to rewrite its mathematics—but now they could only accept what they read.

The Wrights made their first outdoor experiments near Dayton—with a five-foot kite, to test wing control and the tail. They decided to build a glider and test it out "where the wind blew at 18 miles an hour or more." The Weather Bureau in Washington replied to their inquiry that many places along the Atlantic coast had steady winds at 16 to 25 miles an hour. They wrote to the Weather Bureau observer at Kitty Hawk, North Carolina, to ask about sand dunes and low hills from which to glide. He replied that his part of the shore had many such dunes, and that they could be found also at Kill Devil Hill. The Wright Brothers prepared to go to Kitty Hawk the next summer (1900).

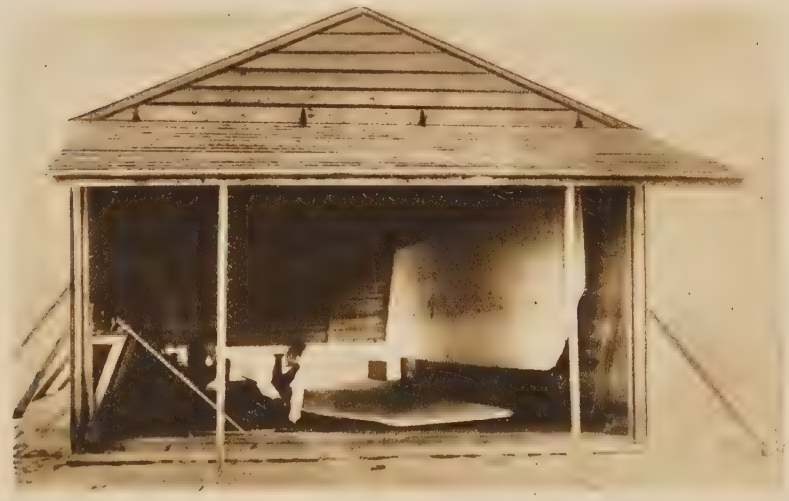
LANDMARK IN DAYTON, OHIO—Where the "New Age of the Air" was born—Photograph in Wide World Collection.



FIRST EXPERIMENTS *of* WRIGHTS *with* GLIDERS—1900



FIRST WRIGHT GLIDER FLOWN AS A KITE AT KITTY HAWK ON COAST OF NORTH CAROLINA.



ASSEMBLING GLIDER IN THE KITTY HAWK HANGAR

The Wrights began to glide—down Kill Devil Hill, a 100-foot dune four miles south (October 1900).

Instead of assuming positions like other gliding fliers, they lay prone — to lessen air resistance. They first flew their glider with neither aboard, as a kite—to test the controls. These worked splendidly. They then made their tests with one man aboard. Capt. Bill Tate, of the nearby Coinjock lighthouse, and one of the Wright Brothers would raise and launch the glider while the other brother sailed down the hill.

Wilbur Wright is seen (below) landing from one of the first glides at Kitty Hawk. They later returned to Dayton to continue their experiments in construction.

Official Wright Photographs in the Brown Brothers Collection.

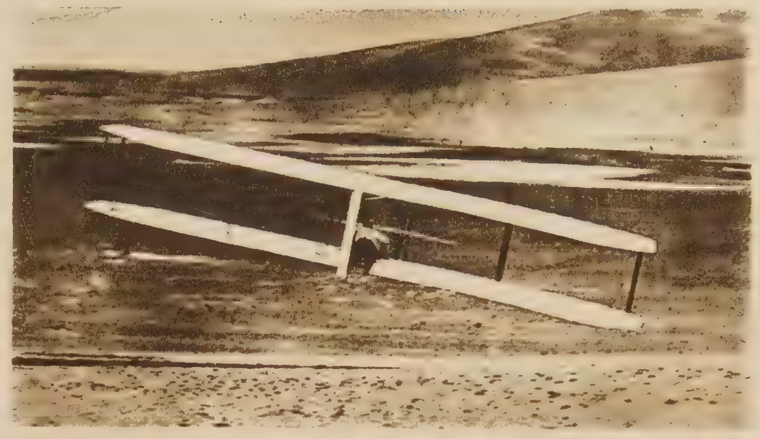
HISTORIC EVENTS now take place in the tiny fishing village of Kitty Hawk on the narrow sand strip between Albermarle Sound and the Atlantic Ocean (1900). The Wright Brothers brought their glider, built in Dayton, down to these North Carolina shores where it was assembled.

It was a biplane with wings 18 feet long and 5 feet wide. It had no tail, but had a novel front "elevator" to prevent nose dives, that was original with the Wrights.

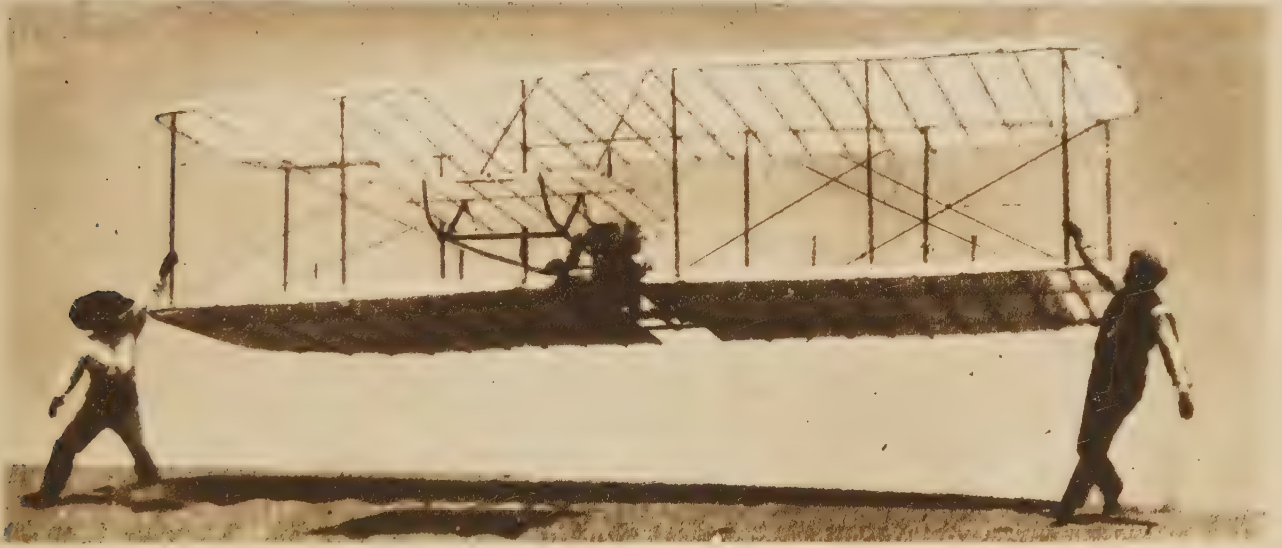
THE WRIGHTS came back to Kitty Hawk for the second summer (1901) with their second glider. It was built at Dayton during the Winter. This had its first test late in July. It was larger than the first, with a 22-foot wing span and planes 7 feet wide.

Their first wings had a curve of 1 in 22; now they fell back on Lilienthal's figures and made this 1 in 12. Lilienthal was wrong—the center of air pressure under the wing moved back too fast and the glider could not be controlled.

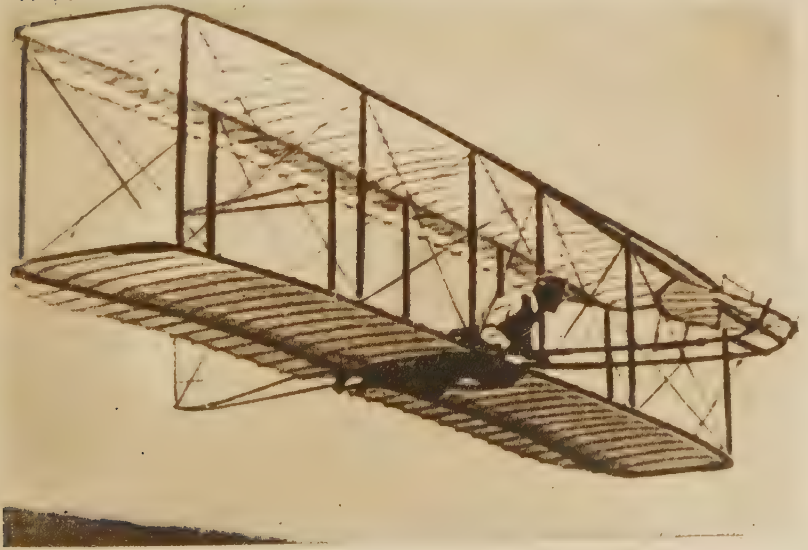
They changed back to 1 in 18 and all was well again. A glide of 389 feet resulted, with perfect fore-and-aft control. If the machine started to tip sidewise, it had to be brought down instantly—for the daring inventors had purposely kept their wing-warping device for lateral control locked until they had perfected the other.



THE GLIDING WRIGHTS AT KILL DEVIL HILL
From the Ernest L. Jones Collection in Washington.



LAUNCHING THE WRIGHT GLIDERS FOR PRELIMINARY TESTS ON THE SANDS AT KITTY HAWK
Official Photograph from the Army Air Corps at Washington.



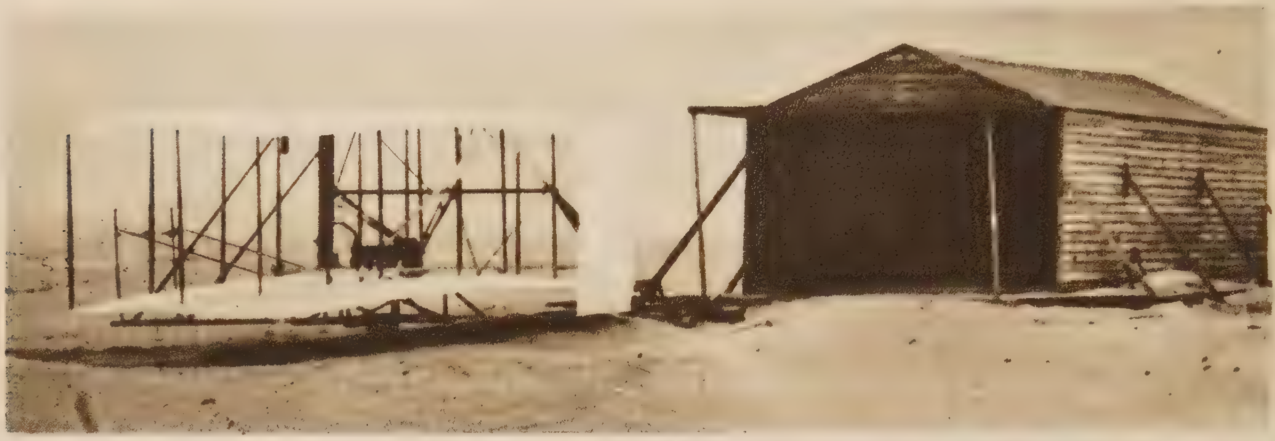
The Wright brothers finally loosed their wing-warping lateral controls and found themselves gliding with perfect safety, against a 27-mile wind.

What had been recreation changed to a definite scientific pursuit. Experience had convinced them that existing aerial data was mostly wrong. At Dayton the next winter the Wrights built the world's first wind tunnel and began to create their own formulas. Next year (1902) their third glider, 32-foot wing spread and 5 feet width, represented prodigious labor and great scientific progress.

They made 1,000 glides that year. Wilbur is shown (left) in full command of the machine in the air. The Wrights believed it was now ready for an engine.
Photograph in Wide World Collection.

LIBRARY
LOS ANGELES COUNTY MUSEUM OF NATURAL HISTORY

HISTORIC *Records from* PRIVATE *Collections of* WRIGHTS



FIRST SUCCESSFUL HEAVIER-THAN-AIR FLIER BEFORE KITTY HAWK HANGAR
Photographs in the Official Government Collection at Smithsonian Institution in Washington.

AVIATION'S HISTORIC YEAR HAS COME—(1903)—when Orville Wright makes the first flight ever made by man in a power-driven airplane under full control.

We have seen the Wright Brothers, for three seasons past, experimenting with gliders at Kitty Hawk, building up their knowledge of heavier-than-air craft—first as a sport and finally with purposeful, scientific intent. We are now to witness their crowning achievement. For many of the facts we are indebted to the man to whom Orville Wright has told his story in full for historical record, Howard Mingos.

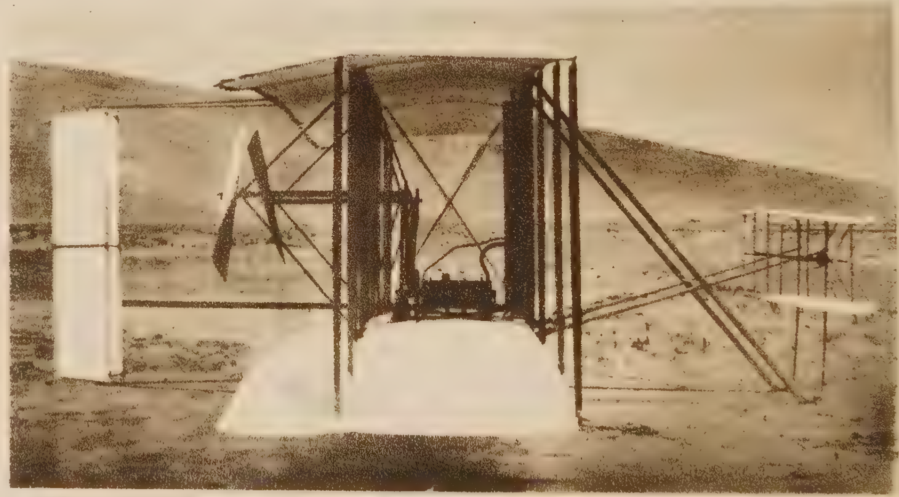
The Wrights had perfected a biplane designed for equipment with a gasoline motor and propellers. Through wind tunnel tests and gliding experiments they had developed the final scientific data. Their computations proved that they needed an 8-horsepower engine to drive their airplane.

The Wrights designed their own engine. C. E. Taylor, their machinist, built it. Within six weeks it was running and eventually it delivered 12 horsepower.

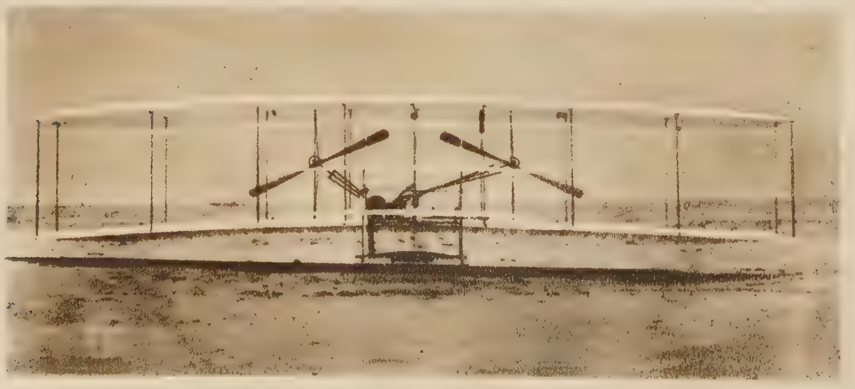
Their new machine was the largest yet built—its wings over 40 feet long and 6½ wide. Everything was shipped to Kitty Hawk and the brothers left (September 3, 1903) for the great trial.

They rebuilt their wrecked camp and repaired the old building (see above), and made many test glides in their glider.

They built a 60-foot monorail track, of wood covered with iron, for launching.



SIDE VIEW OF THE FAMOUS WRIGHT BROTHERS' MODEL "A"



Late in November the machine was ready—but the weather was stormy. They ran the engine and propellers indoors, and developed a cracked propeller shaft. Orville took this to Dayton.

He returned (December 11) with new shafts of solid steel, and the next afternoon they were again ready—but the wind was too light for a take-off on level ground.

We shall see what happened directly. Meantime we have a front view of their machine (left).

GREAT DAY *Comes*—"HISTORY-*in-the*-MAKING"—1903

THE CAMP AT KITTY HAWK

THE TOSS OF A COIN decided which of the Wright Brothers was to try to make the first airplane flight—Orville or Wilbur. Wilbur won. He took off from Kill Devil Hill (December 14, 1903), but failed to fly.

There was no wind, so they decided to make the trial on the hill a quarter-mile away. On their signal five of their friends from the Life Saving Station came over to help move the machine and track to Kill Devil. They laid the track 150 feet up the hill and the machine was placed on it, facing the wind.

Wilbur lay prone in the biplane and pulled the wire releasing it. He rose too abruptly from the starting rail and the machine stalled and settled into the sand—after 3½ seconds in the air. One skid was broken, but there was no serious damage.

AT LAST—THE DAY OF DAYS! Human flight, the aspiration of all the ages, becomes a reality—the marvelous achievement of man (December 17, 1903).

The Wright Brothers blazon their name across the sky to undying fame. On the desolate Kitty Hawk sand dunes, with five men from a nearby life saving station and the sea birds to witness the feat—man masters the air at last.

It was bitter cold that Thursday morning. A gusty 27-mile wind was blowing. It seemed unsafe to try their machine, but finally they decided to start from the level ground before the camp. Warming their hands over the stove, they made ready. It was Orville's turn; Wilbur had had his on the 14th. The witnesses of this epoch-making event were J. T. Daniels, W. S. Dough, A. D. Etheridge, friends from the life-saving station, W. C. Brinkley of Manteo and Johnny Moore, a Nag's Head boy.

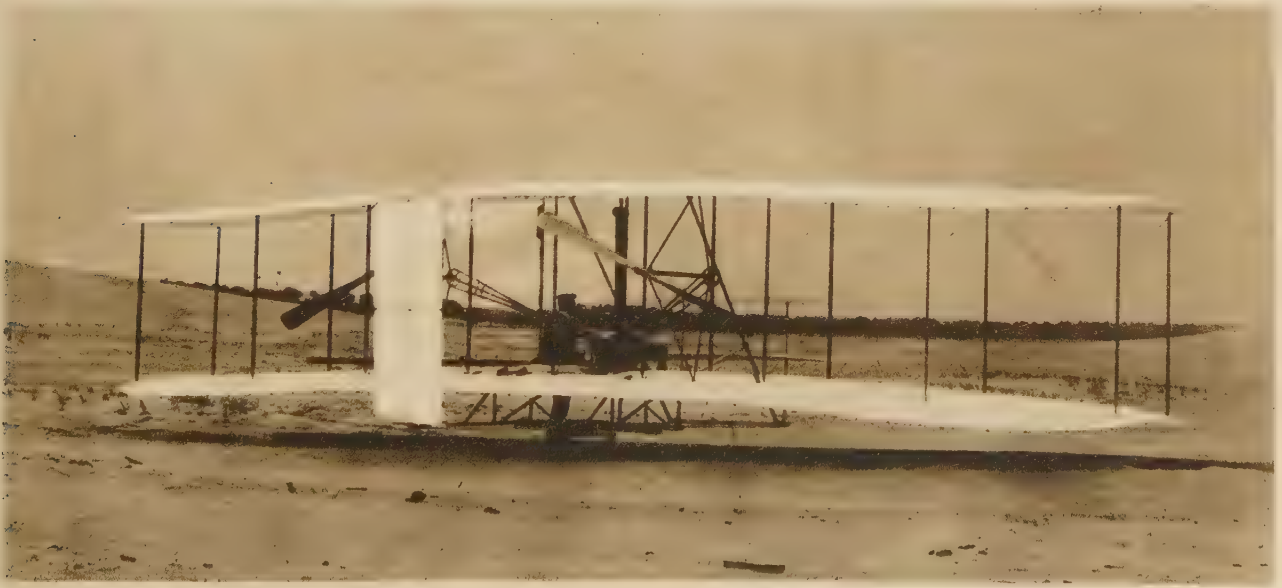
10:30 A.M. Orville Wright lay face down in the machine—warmed up the motor—and released the wire. Against the gale it started slowly. Wilbur ran alongside for 40 feet.

"She's off!" The witnesses waved their hats and shouted. The first airplane slowly rose and mounted the air—under full control! The dream of the centuries had come true. Orville Wright was in the air 12 seconds—flying over 120 feet—at a maximum of 31 miles an hour—in a flying machine whose engine lifted about 63 pounds per horsepower.

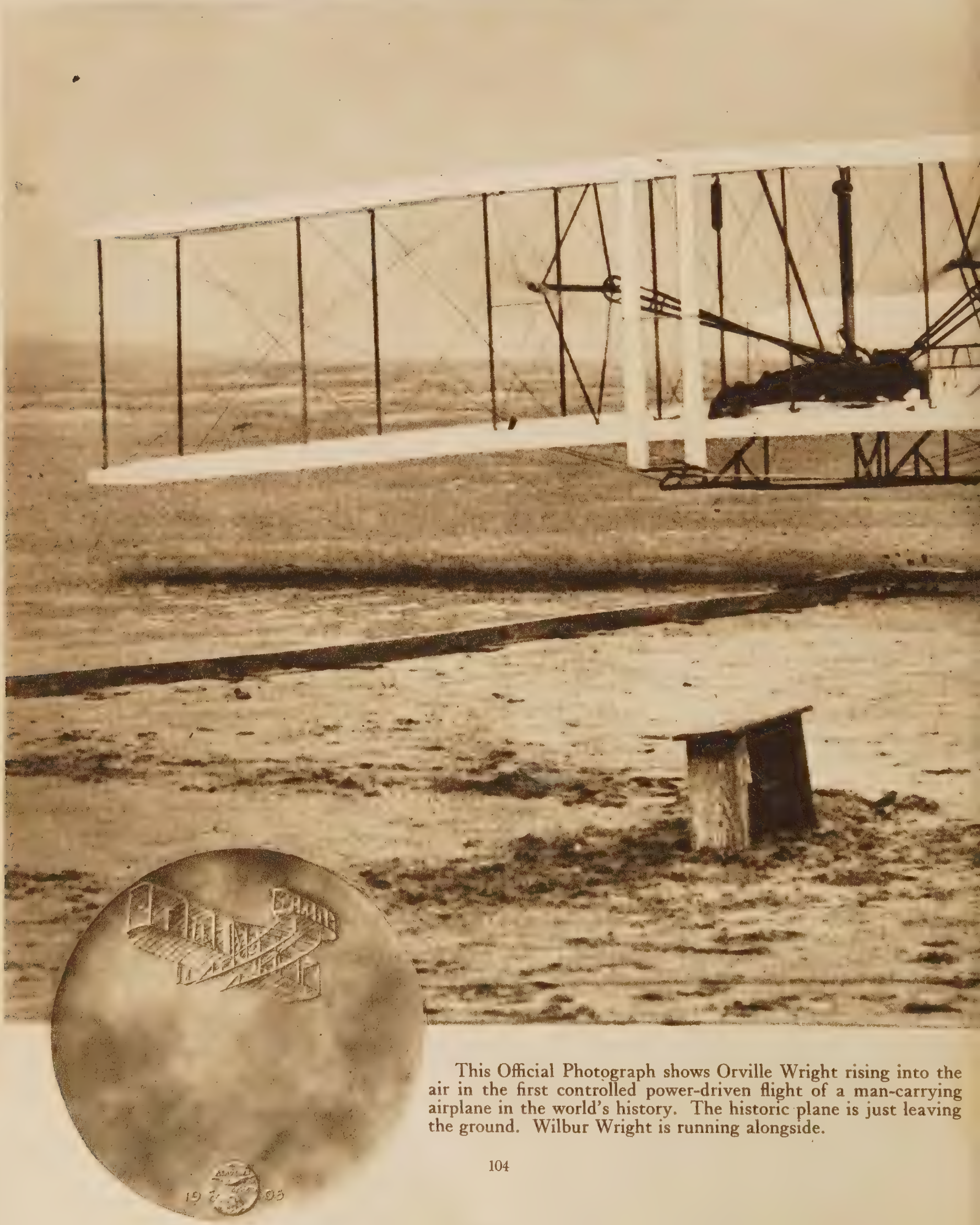
Wilbur Wright now took the machine, and flew it 195 feet, in 13 seconds. Then Orville bettered this by 2 seconds and 10 feet. And at noon Wilbur made the record flight of the day—he was in the air 59 seconds and flew 852 feet!

The Wrights had won! The honor had come to America!

ORVILLE WRIGHT BEFORE THE FIRST WRIGHT AIRPLANE AT KITTY HAWK

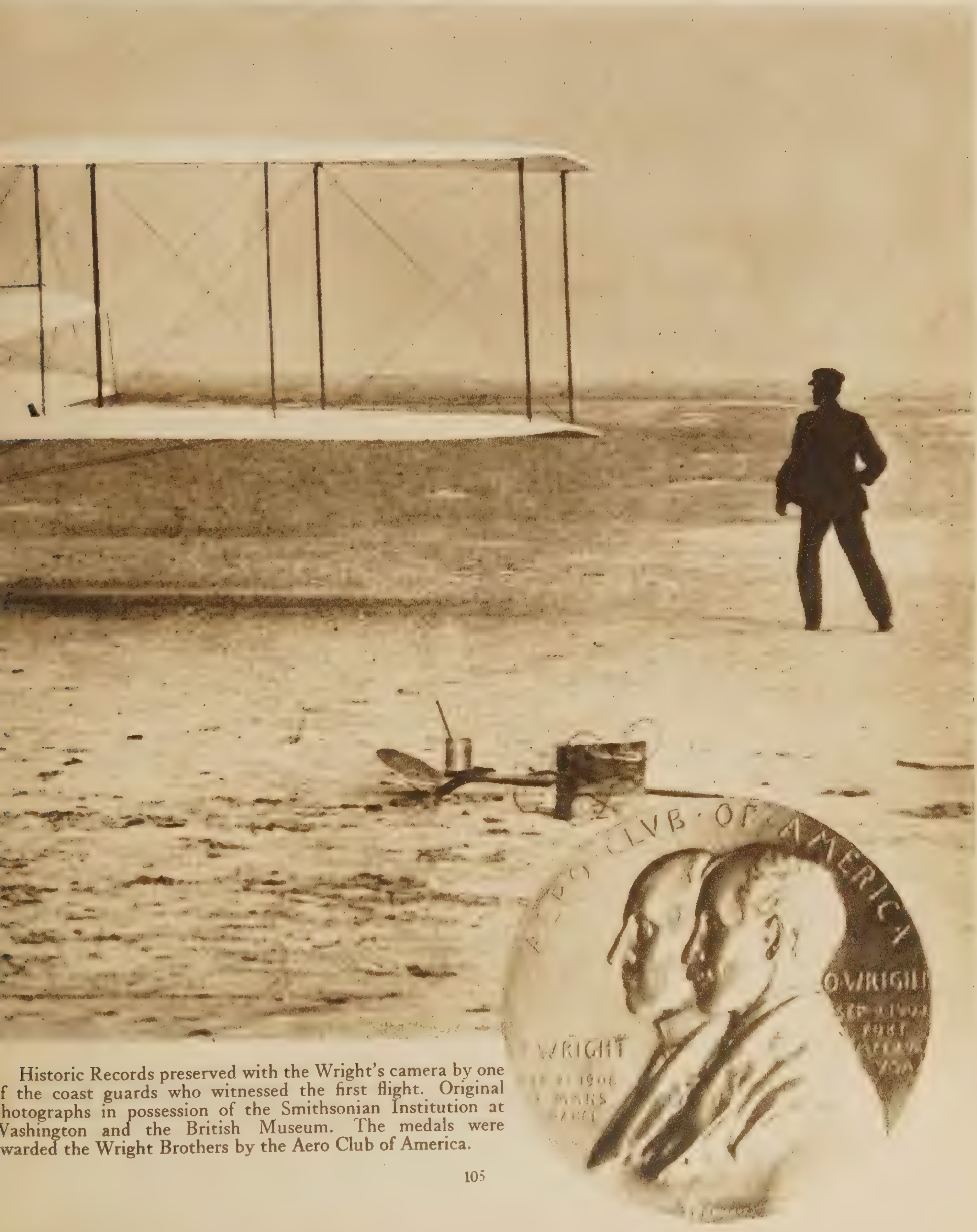


VICTORY! DREAM *of Centuries Comes* TRUE—*December* 17, 1903.



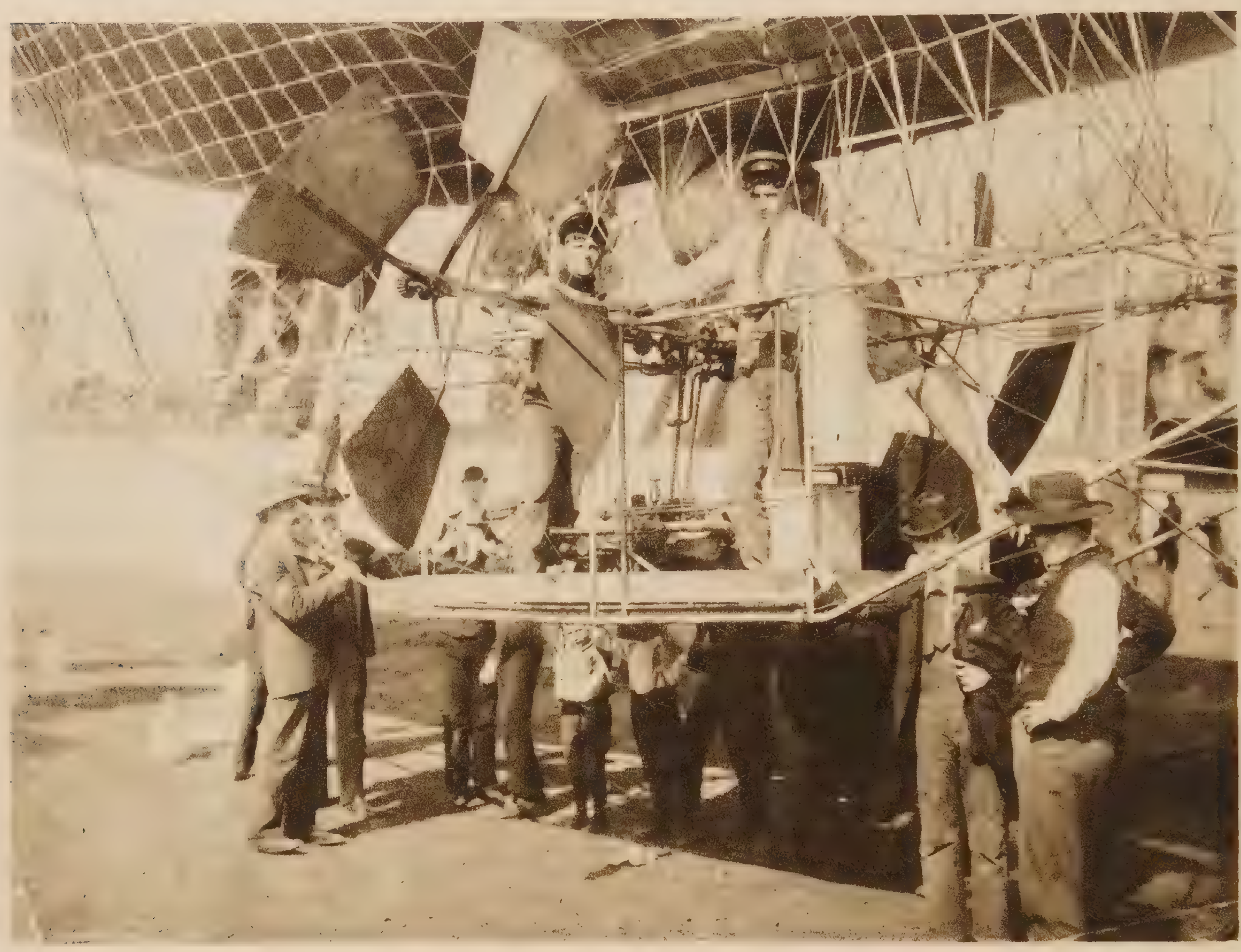
This Official Photograph shows Orville Wright rising into the air in the first controlled power-driven flight of a man-carrying airplane in the world's history. The historic plane is just leaving the ground. Wilbur Wright is running alongside.

First Successful FLIGHT *of* AIRPLANE *in* WORLD'S HISTORY

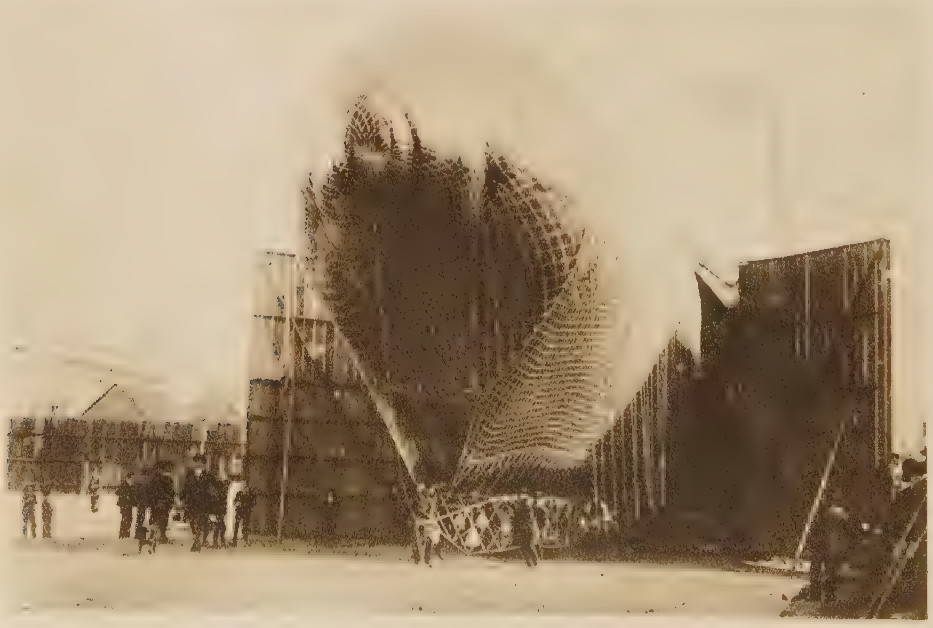


Historic Records preserved with the Wright's camera by one
f the coast guards who witnessed the first flight. Original
hotographs in possession of the Smithsonian Institution at
Vashington and the British Museum. The medals were
warded the Wright Brothers by the Aero Club of America.

CALIFORNIA *Inventor Builds All*-AMERICAN AIRSHIP—1903



ONE OF AMERICA'S EARLIEST AIRSHIPS—DIRIGIBLE BALLOON OF DR. GRETH
Private Photographs of the Huge Dirigible. Leaving its Hangar (below). Car of Airship (above).



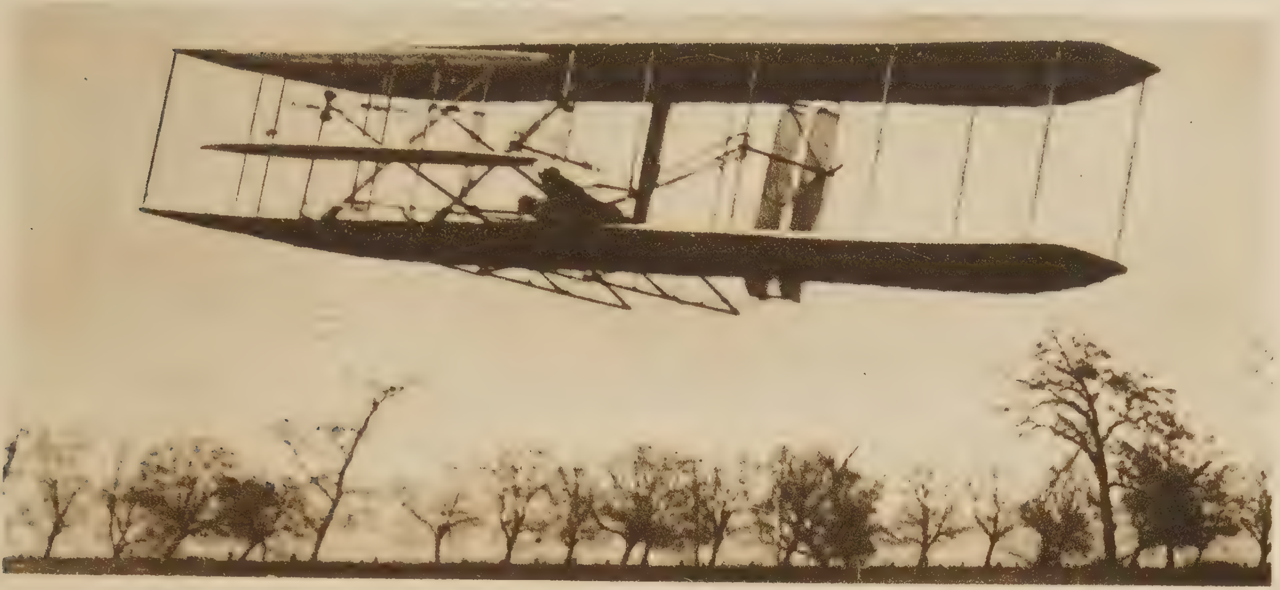
DR. AUGUST GRETH, of San Francisco, built one of America's first airships (1903) and navigated it successfully over San Francisco and the surrounding country.

His first flight was on Sunday, (October 18, 1903) and he made other notable flights over the city (April 23–28, 1904).

His type of airship was quite distinct from the rigid-framed Zeppelins which have come since, or even semi-rigid like the French military airships. These Pacific coast airships were dirigible, cigar-shaped balloons with engine and propeller.

Print (above) from Brown Brothers Collection and (left) from Acme Collection.

The WRIGHTS *Progress in* FLYING TECHNIQUE—1904



ORVILLE WRIGHT FLYING AT SIMS STATION, NEAR DAYTON, OHIO—1904 (Above)
Original print in private archives of Orville Wright and in the Collection of Brown Brothers.

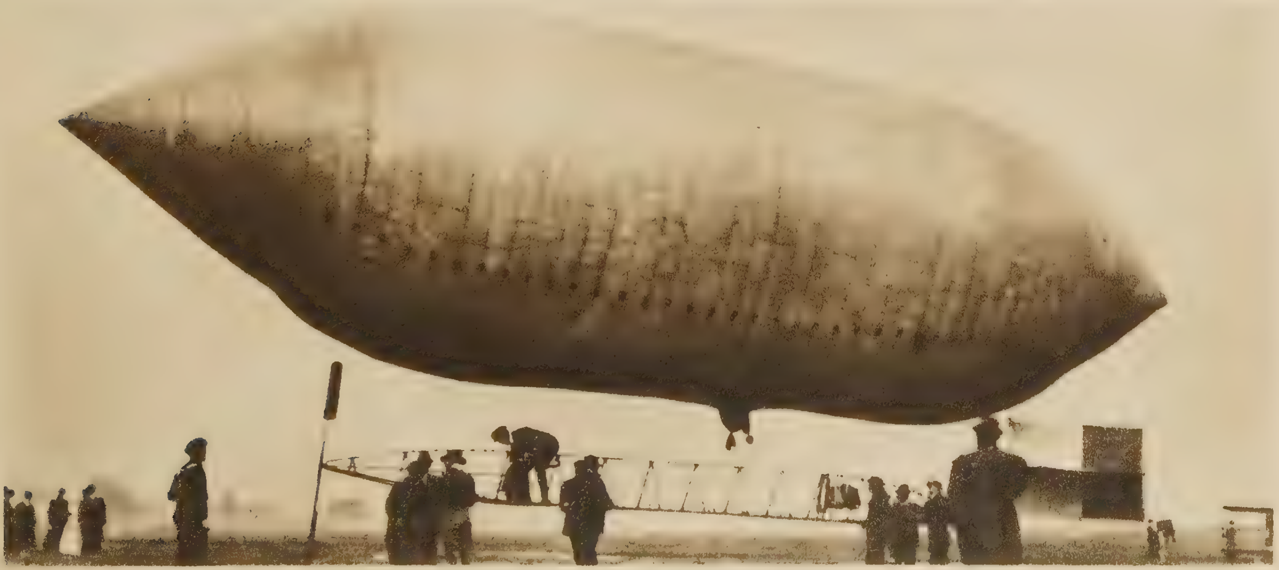
ORVILLE AND WILBUR WRIGHT returned to Dayton after their first airplane flights at Kitty Hawk, N. C. (December 17, 1903) and at once set about building another and larger machine. They shortly were flying this at Huffman Prairie—the farm of their friend Torrence Huffman at Sims Station, 8 miles from Dayton (April 1904). They even attempted a public exhibition to newspaper men and others they invited, but engine difficulties made this an unsatisfactory test.

The Wrights gradually improved the plane's stability in the air—the big problem. They made over a hundred and fifty flights (1904–1905)—in which they developed control of their mechanism to the extent that they were finally able to turn and circle in the air without difficulty.

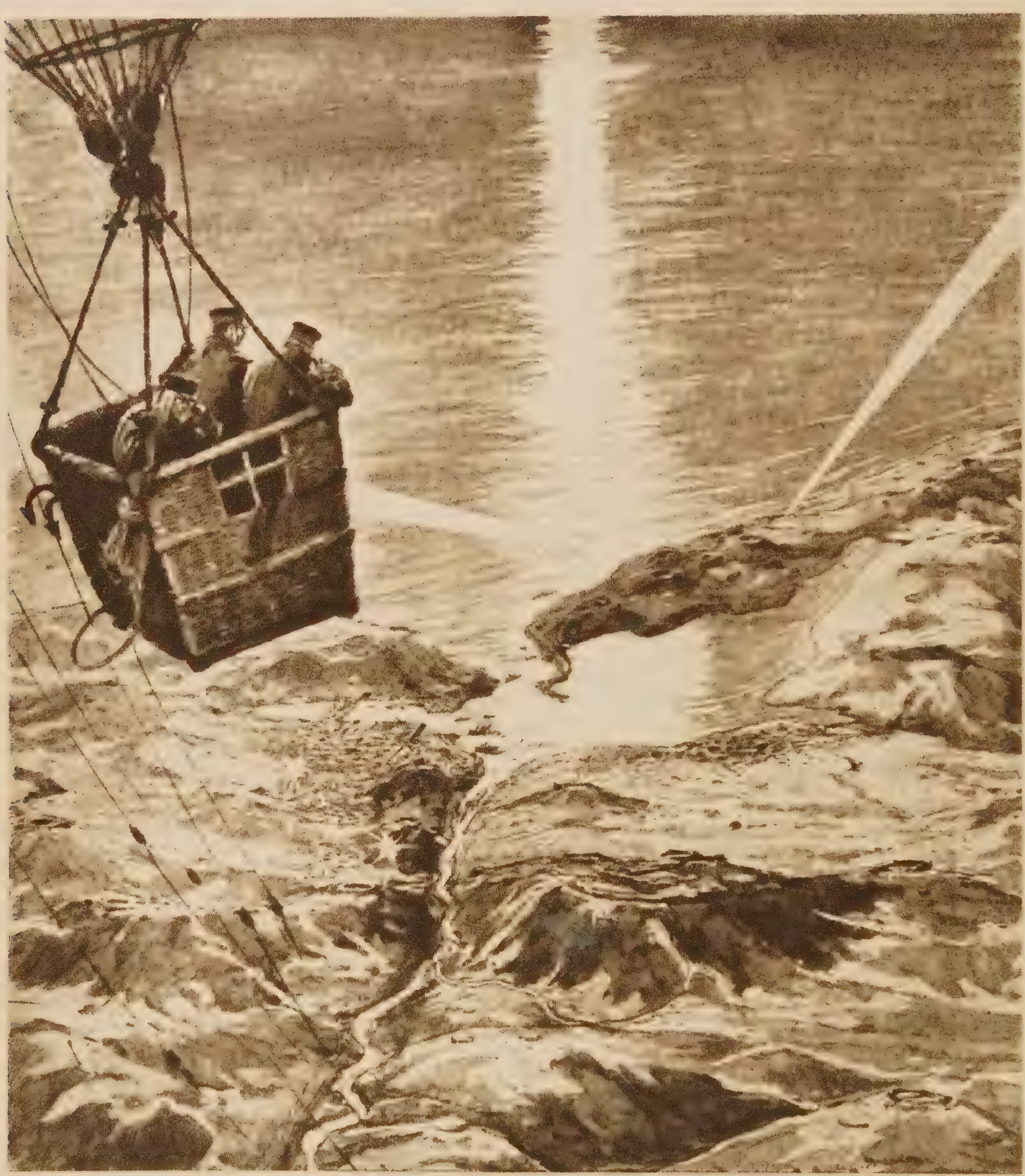
The airship (dirigible balloon) was coming fast in America. Capt. Tom Baldwin built America's first practical airship, the "California Arrow," (1903). A special engine built by Glenn Curtiss was installed. Curtiss made the highest grade motorcycle engines in America at Hammondsport, New York.

This was the only successful airship at the St. Louis Exposition (1904)—out of many from this country and abroad which competed for prizes. Lincoln Beachey created a sensation by his daring exhibitions.

BEACHEY IN BALDWIN'S AIRSHIP AT THE ST. LOUIS EXPOSITION (Below)
Official photograph of U. S. Army Air Corps in the Jones Collection.



FIRST *Use of* KITE BALLOON *in Russo-Japanese* WAR—1904

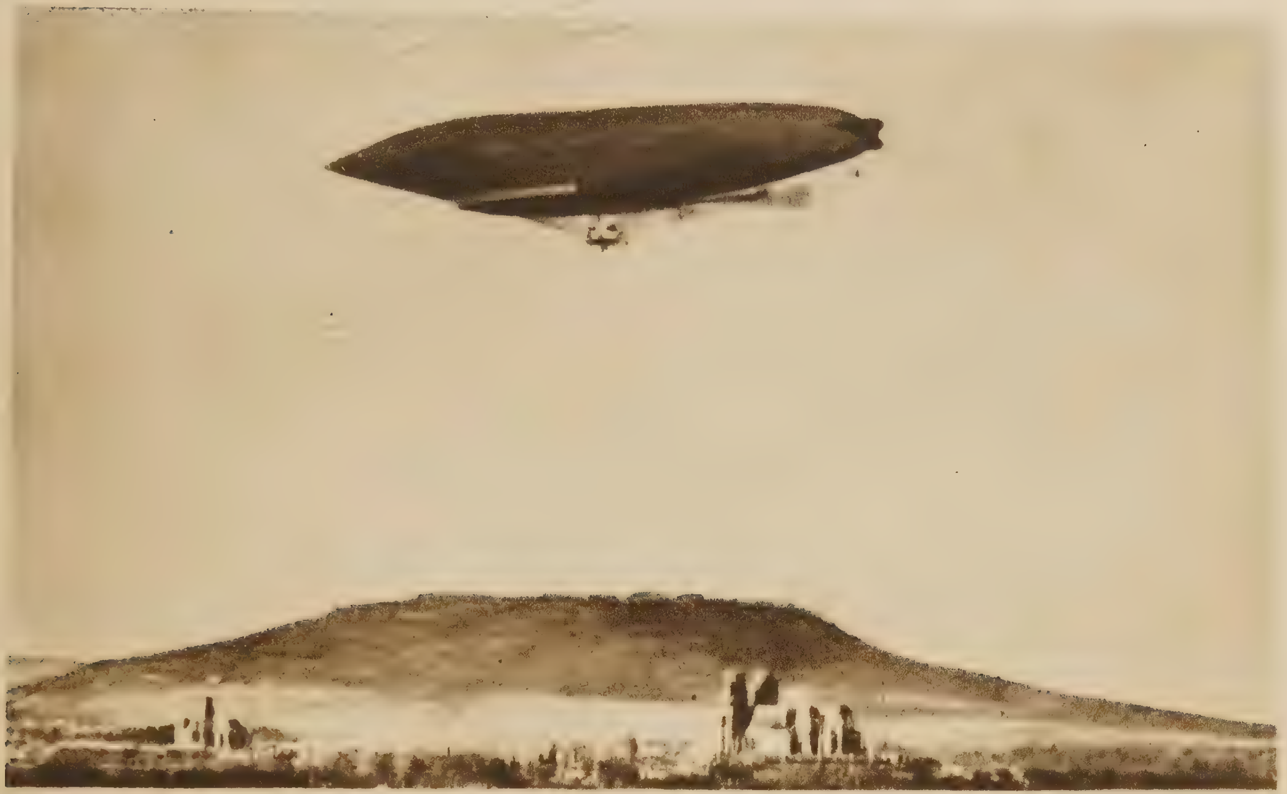


THE RUSSO-JAPANESE WAR (1904) brought the first use of the kite balloon in warfare. Spherical balloons had been used for military observation for a century, but the Japanese in their operations around Port Arthur were first to use a small dirigible which was part of their aerial equipment

Russian fortifications enabled the Czar's troops to hold Port Arthur for many months, but finally it fell—largely because of the accurate knowledge of its situation the Japanese had gained from the air.

Meantime the Russians were making effective use of war balloons. They had a naval balloon division at Vladivostok and a balloon company in Manchuria. Russian balloons were in the air at the battle of Liaoyan and a Russian balloon was under fire at the battle of Mukden.

French AIRSHIPS *Build Up Gallic* AERIAL NAVY—1904

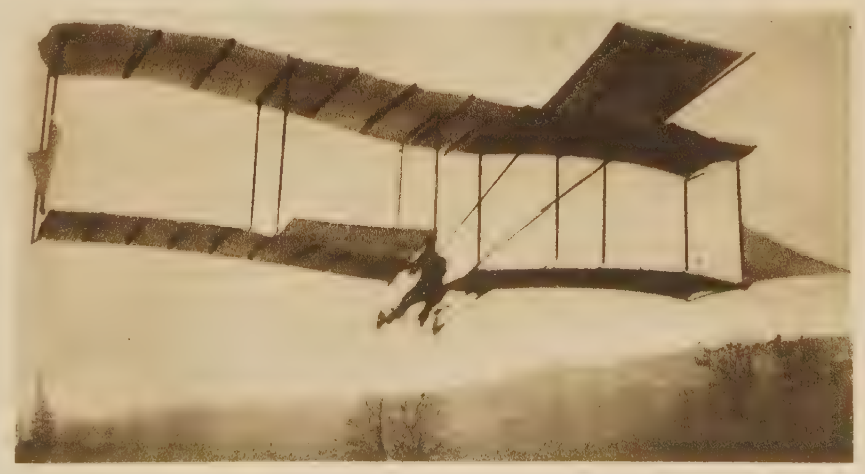


FAMOUS "LEBAUDY" IN SEVENTY-SIX TRIAL VOYAGES FOR FRENCH GOVERNMENT
Official print in the Archives of the Aeronautical section of the French Army.

THIS semi-rigid Dirigible was constructed by the Lebaudy brothers (1904), wealthy sugar refiners who had turned to aeronautics so enthusiastically two years before. Their first dirigible, the "*Jaune,*" had been wrecked (November, 1902,) on returning to her hangar at Chalais-Meudon, outside Paris, from her twenty-ninth successful air voyage. Her engine was unhurt and was put into the "*Lebaudy,*" (above) which was launched in June (1904).

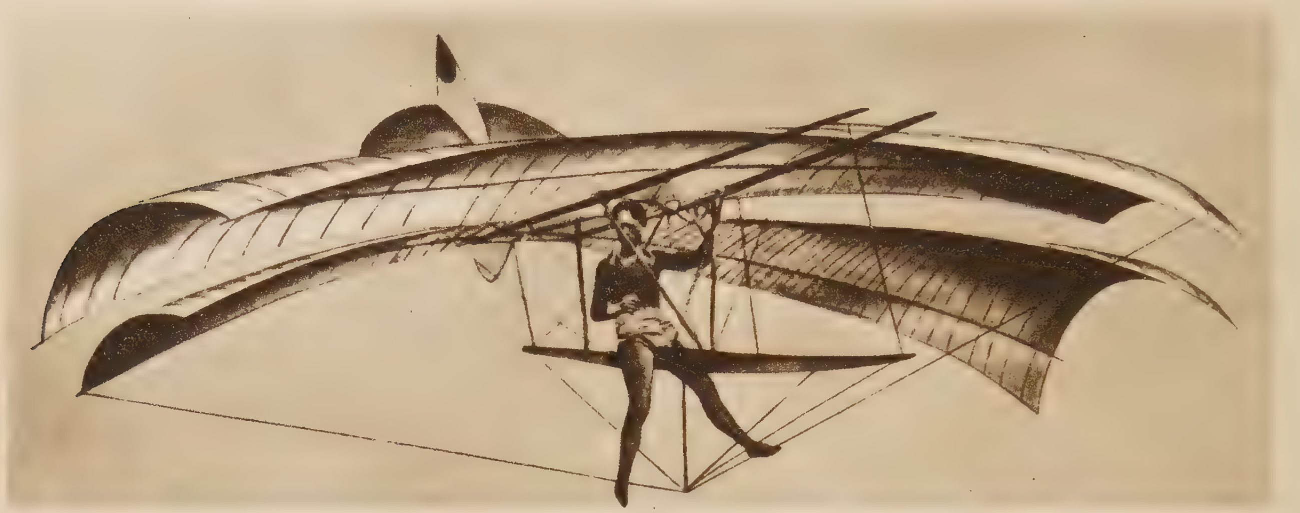
This forerunner of the French Aerial Navy was longer and larger than the "*Jaune,*" with a pointed nose and rounded stern,—the latter provided with guiding planes like the butt of an arrow. She was an elaborate affair, costing nearly $60,000 and resulting from experiments costing more than $500,000. The requirement of the Ministry of War was that the ship should be in active operation for three months, constantly anchored in the open, and perform certain stipulated voyages and maneuvers. She made thirty voyages in her first year (1904), and could easily have fulfilled the Government's test conditions.

The "*Lebaudy*" made seventy-six successful air voyages in her second year (1905) and in November was taken over by the French Government. The Minister of War and members of his staff were passengers during her seventy-sixth aerial journey.



CAPTAIN FERDINAND FERBER of the French army stood out among early French fliers as of very great promise—until his untimely death. He was detailed to investigate flying (1899) and for several years conducted glider experiments. Later he took up the airplane and until his death he was devoted to aviation. This photograph is from the Augustus Post Collection. It shows Captain Ferber in his most successful glider (December 1904). He was to be fatally injured in an airplane crash at Boulogne (September 22, 1909) and die a half hour later.

Professor MONTGOMERY *Brings Out* MONOPLANE *Glider*—1905



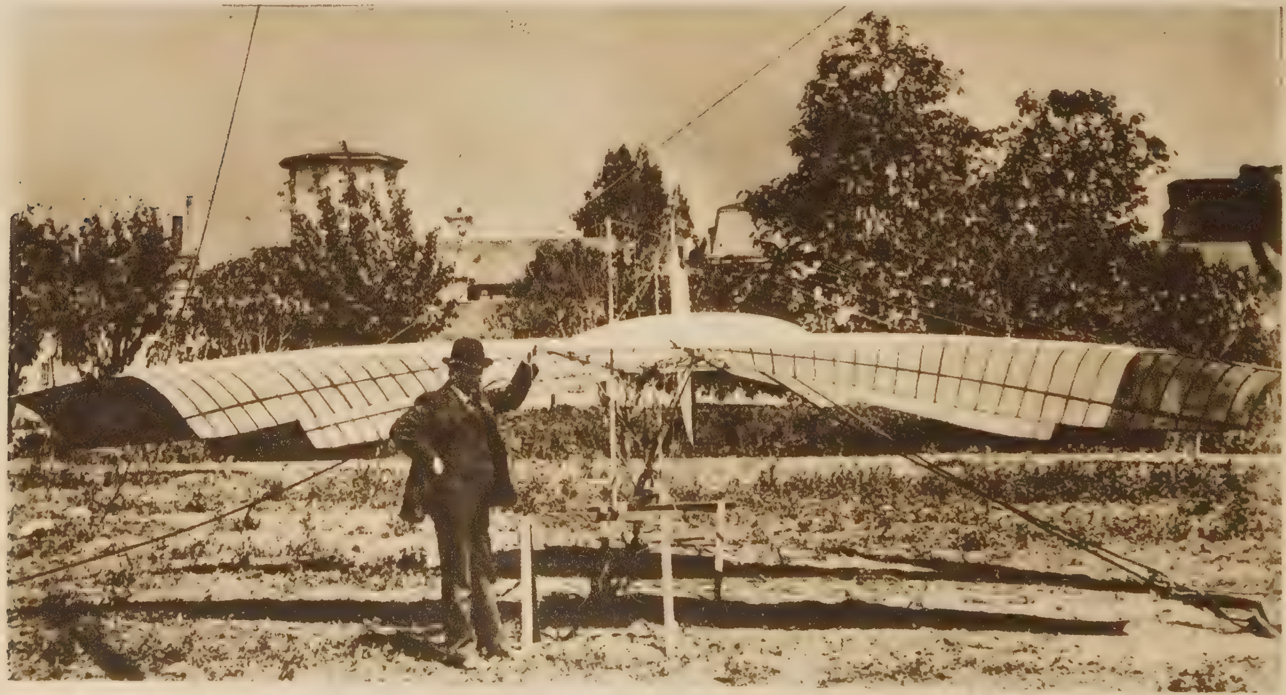
MONTGOMERY TANDEM MONOPLANE GLIDER WITH RIDER ABOARD
Prints in the Brown Brothers Collection and in the Archives of the Smithsonian Institution at Washington.

A GREAT PIONEER in the development of aeronautics in America was Professor John J. Montgomery of Santa Clara College, Santa Clara, California. He was the first native American to construct and successfully maneuver gliders. Montgomery gained a mastery of the monoplane glider probably greater than that of any other man of his times. His striking demonstrations of the Montgomery glider (1905-1906) occurred, however, long after the Wright brothers had established human flight in a motored airplane (1903).

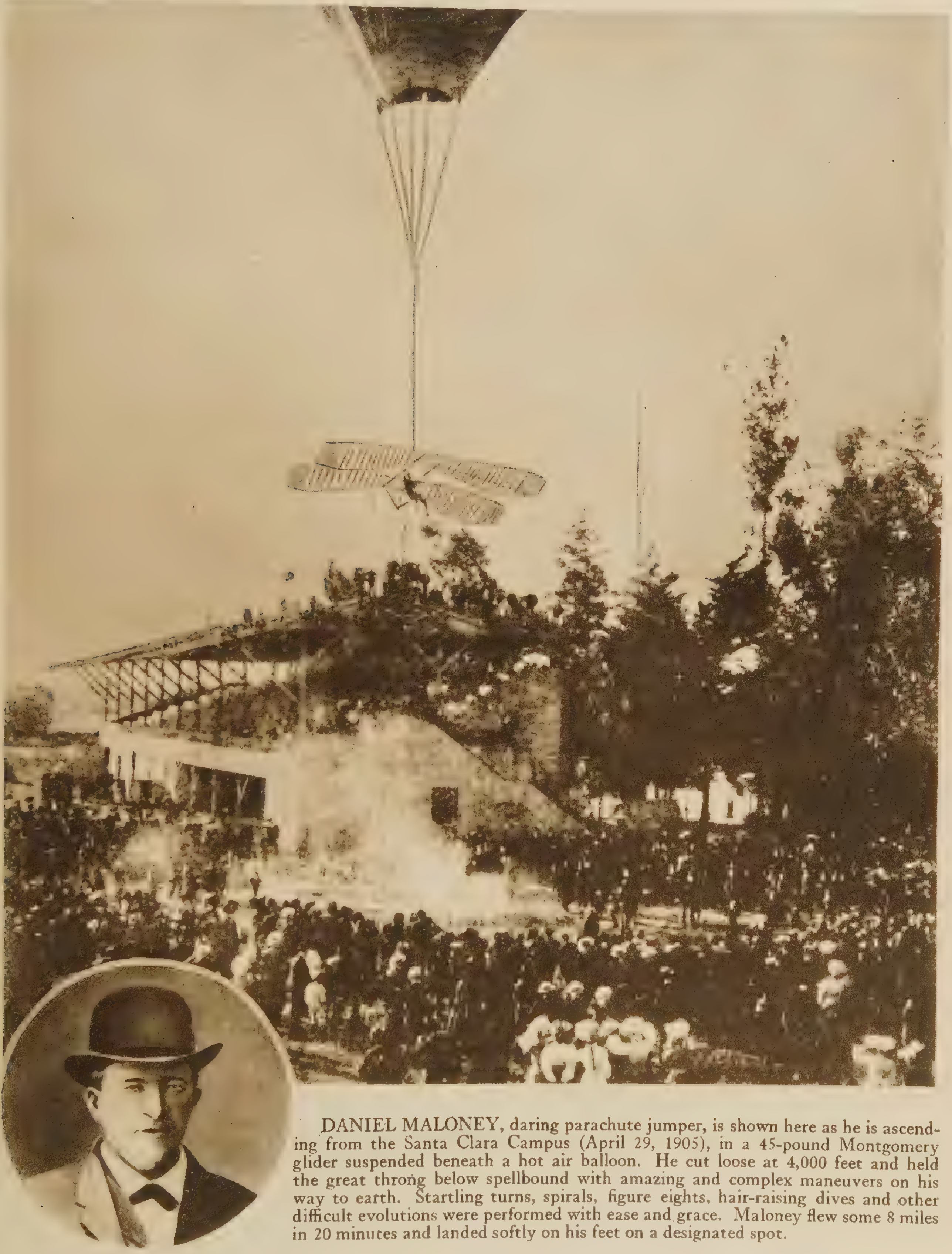
Montgomery was a pioneer in the use of curved wing surfaces and of the aileron principle in hinged wings for maintaining equilibrium in the air. He never gave aeronauts who flew his gliders full command of his discoveries and he made no attempt to equip his glider with an engine. His method was to have a balloon lift the glider, with rider aboard, thousands of feet in air, cut it loose—and the operator would fly it to a final safe landing.

Daniel Maloney, professional parachutist, was Montgomery's star flier. Montgomery's men all performed amazing evolutions in his machines in the air until the San Francisco earthquake interfered. Montgomery had built his first glider (1883) and finally died from injuries in a glider accident (October 1911).

PROFESSOR JOHN J. MONTGOMERY STANDING BY HIS GLIDER (below)

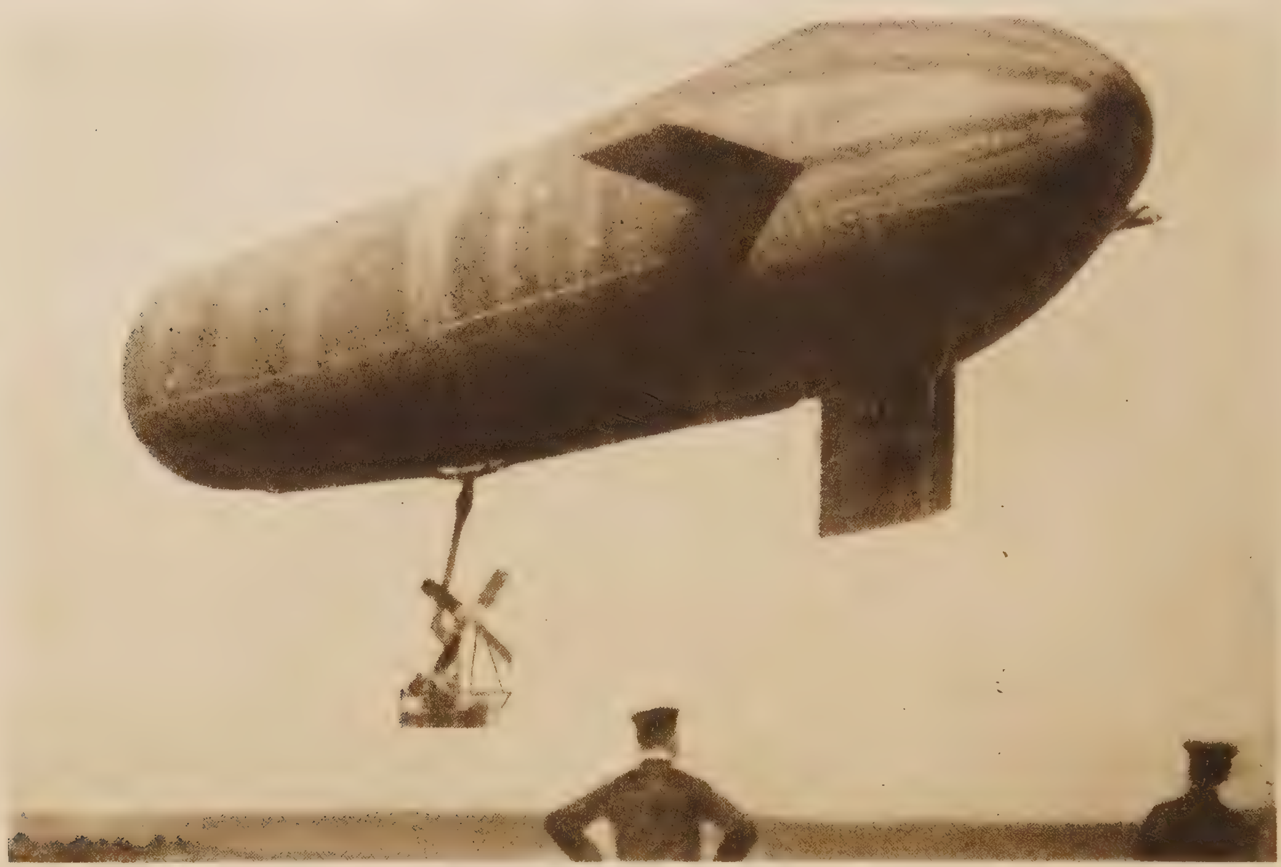


MALONEY MANEUVERS *Novel Montgomery* GLIDER—1905



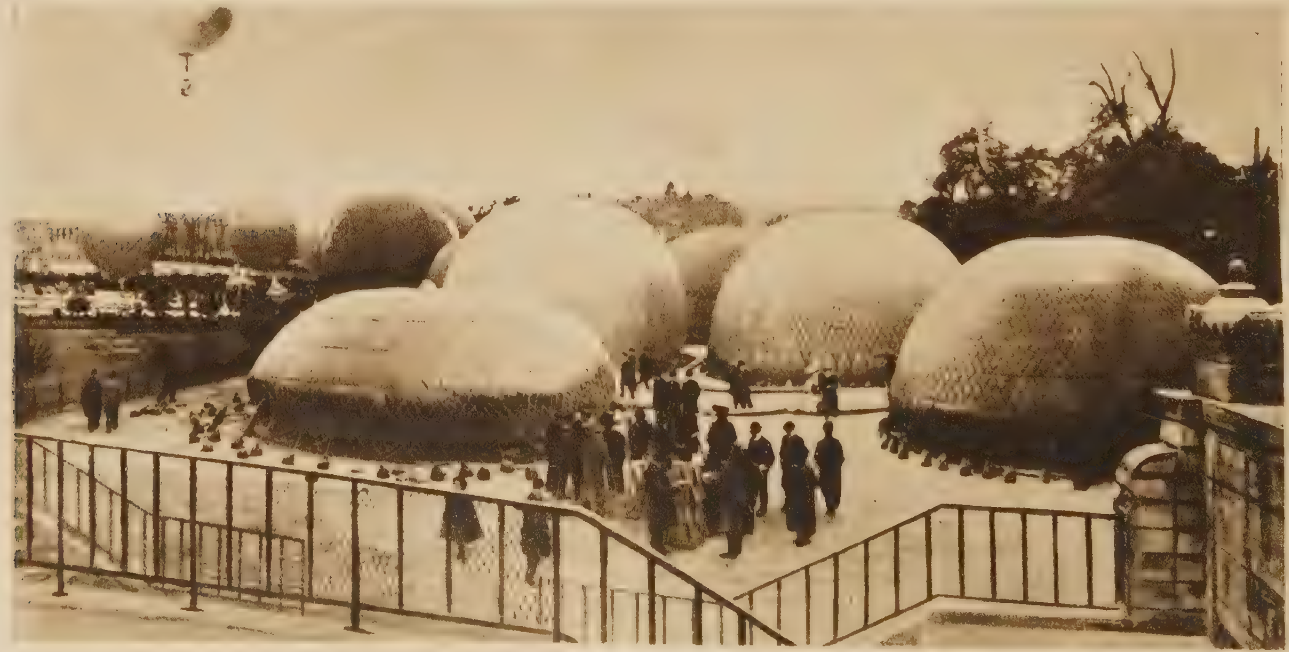
DANIEL MALONEY, daring parachute jumper, is shown here as he is ascending from the Santa Clara Campus (April 29, 1905), in a 45-pound Montgomery glider suspended beneath a hot air balloon. He cut loose at 4,000 feet and held the great throng below spellbound with amazing and complex maneuvers on his way to earth. Startling turns, spirals, figure eights, hair-raising dives and other difficult evolutions were performed with ease and grace. Maloney flew some 8 miles in 20 minutes and landed softly on his feet on a designated spot.

First AUTO BALLOON *Built for the* GERMAN ARMY—1906

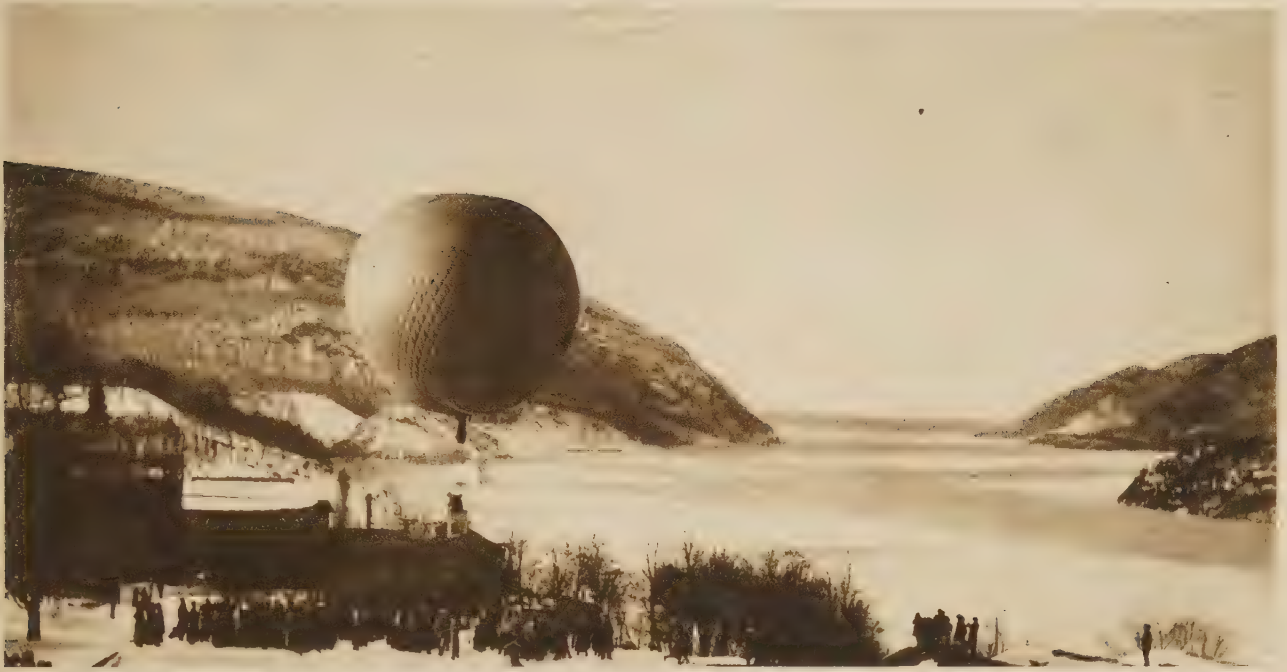


FIRST FLEXIBLE AUTO BALLOON BUILT FOR THE GERMAN ARMY (1906). "Parseval I," built by Major Von Parseval at the Command of Emperor Wilhelm. Von Parseval was a Bavarian who designed a Series of Successful Dirigible Balloons for the German Government. Print (above) in Collection of Col. W. J. Hammer.

AERONAUTIC FETE AT THE TUILERIES GARDENS, PARIS, (October 1905) for the Benefit of Earthquake Sufferers in Calabria, Italy. Six Nations are represented (below): France, United States, Russia, Italy, England, Belgium.

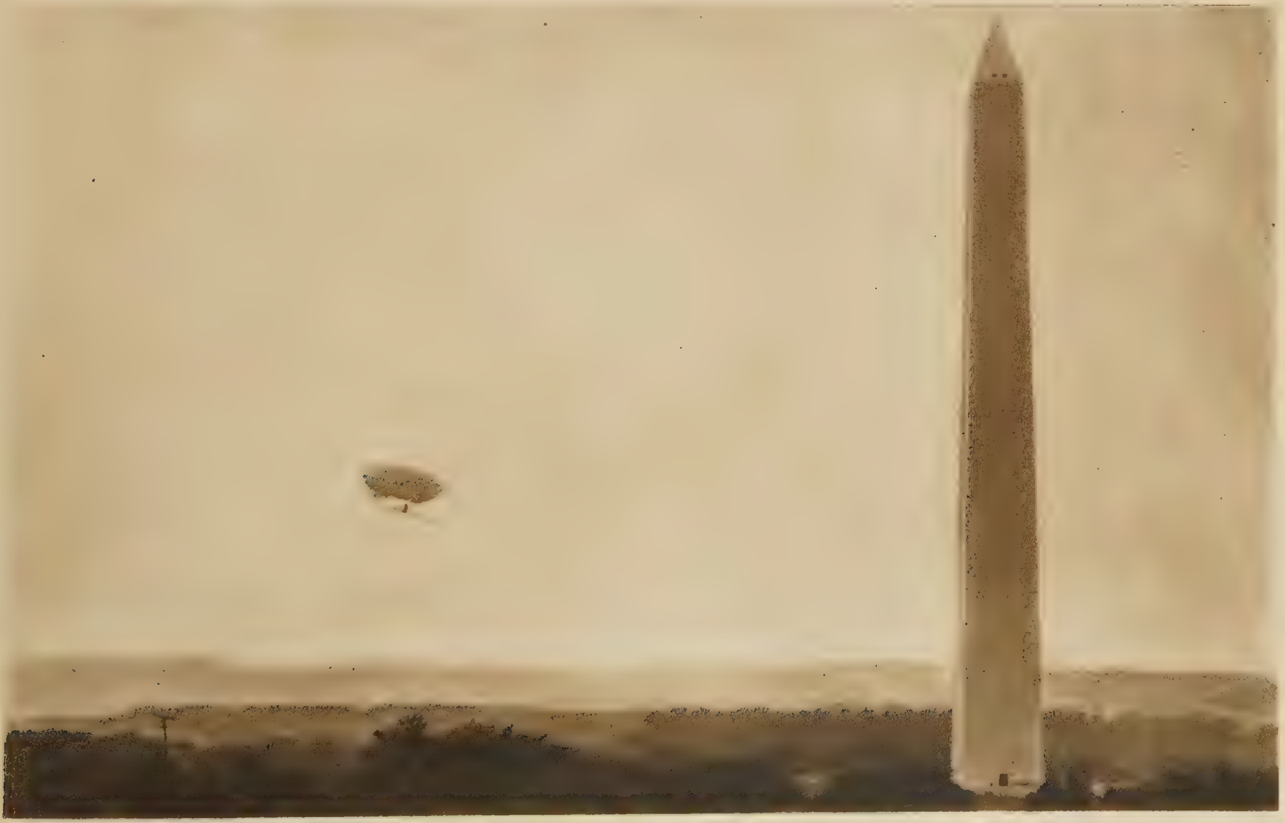


West Point CADETS *Witness First* BALLOON *Ascension*—1906



FIRST BALLOON ASCENSION AT WEST POINT—Aero Club of America's First Balloon, "Aluette," in the Initial Ascent at the West Point Military Academy (January, 1906). The Aeronaut was Charles Levee, of France. Photograph in Brown Brothers Collection.

FIRST FLIGHT AROUND WASHINGTON MONUMENT. One of America's First Airship Pilots, the intrepid Lincoln Beachey, in a spectacular flight around the Washington Monument in Washington (June 13, 1906). Official Photograph in Record of United States Army Air Corps.



A. Santos-D

PART VII

FIRST KNIGHTS *of the* SKIES—AERIAL AGE

BEGINNING *of the* NEW EPOCH *in* EUROPE *and* AMERICA

THE FIRST QUINQUENNIUM—following the victory of the Wrights (1903)—carries us through a period of adventure that challenges the imagination of man. The First Successful Airplane Flight in the World's History, as we have seen, lasted twelve seconds; the second and third were slightly longer; the fourth lasted 59 seconds and covered a distance of 852 feet.

From these beginnings, we find the Wrights continuing their experiments, establishing new principles in aerodynamics, re-writing its mathematics into a science, and inaugurating the Aerial Age.

Roosevelt is the dynamic personality in America; Edward VII is reigning in England; and Emperor Wilhelm in Germany. The Russo-Japanese War disturbs the East (1904), while in America the new science is engaged in equally hazardous adventures in the Conquest of the Air: The Wrights make the first flight in a circle, rapidly increasing their flights in length until Wilbur Wright flies a distance of 24 miles in 38 minutes over a small circular course (October 5, 1905)

Europe, realizing the portent of the new conquest, is stimulated by the events taking place in America. Vuia, of France, enters claim to the first European flight (March 18, 1906) but the official records, after weighing all the evidence, state: "The First Flight in Europe, officially recorded, is made by Santos Dumont (September 13, 1906) when he flies for a distance of 36 feet." He later travels a distance of 700 feet, remaining in the air 21 seconds and winning the Grand Prix offered by the Aero-Club de France.

The First Gordon Bennett Balloon Cup Race between seven nations is held in Paris (1906); America, with Lieut. Lahm, wins the First International Air Trophy. Delagrange demonstrates the Voisin biplane in France (1907); Henri Farman then flies a Voisin 2,500 feet in 52 seconds.

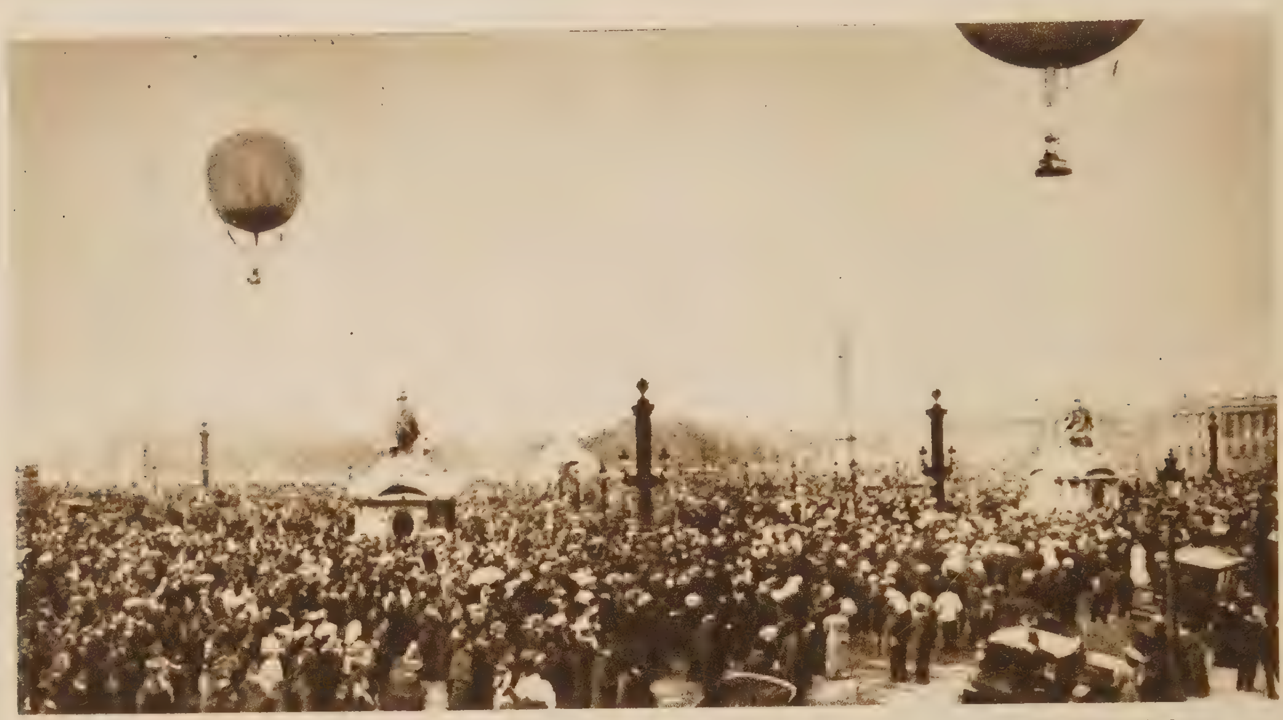
The "Longest Over-Sea Balloon Voyage" is made from England across the North Sea to the coast of Denmark, a sea distance of 360 miles—and on to Sweden (October 12, 1907)—a total of 700 miles, failing to break the world's land record of 1,193 miles held by Count de la Vaulx of France.

During this same year (1907) "La Patrie" sweeps to destruction over the Atlantic; the English army builds its first semi-rigid airship; the First Great American Air Meet is held at St. Louis; German pilots break world records; America encourages airmen by offer of the Scientific American Cup.

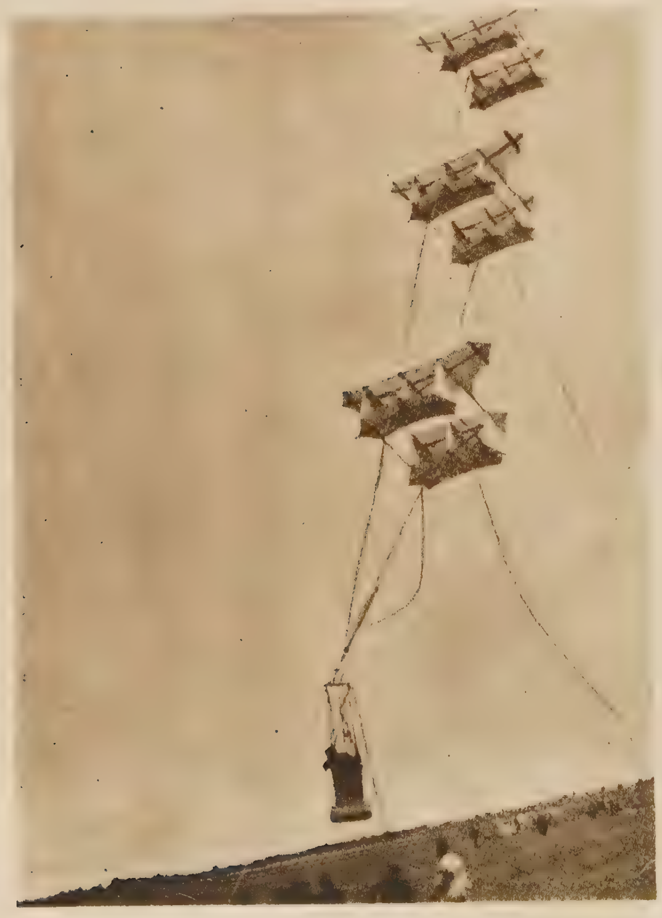
The "First Kilometer Flight by Aeroplane in Europe" is flown by Farman in France in one-and-one half minutes (February 11, 1908); Delagrange flies a distance of 10 1-2 miles in 16 minutes at Milan (June 22, 1908).

This first five-year period of the airplane from the first flight by the Wrights in America, shows the fight against the elements being won only by feet and seconds—and then by miles and minutes. The new science is developed by courageous men, risking their lives for the emancipation of earth-bound humanity.

First GORDON BENNETT *Balloon* CUP RACE—*Paris*, 1906



PARIS THRONGS WATCH SEVEN NATIONS START RACE FOR GORDON BENNETT CUP
Drawing by a staff Artist of "L'Illustration" (Paris) in the Place de la Concorde.



AN AMERICAN ARMY OFFICER—Lieutenant (now General) Frank P. Lahm of the Sixth Cavalry—won the World's First Balloon Cup Race, for the James Gordon Bennett Aeronautic Cup (1906).

With Major Henry B. Hersey of the Roosevelt Rough Riders as his companion, Lieut. Lahm piloted the balloon "*United States*" from Paris across France to the westward, crossing the English Channel by night, and finally coming to earth at Whitby in Yorkshire, England—410 miles in 22 hours, 17 minutes. Signor Vonwiller, of Italy, was second; and the Comte de la Vaulx, of Paris, third.

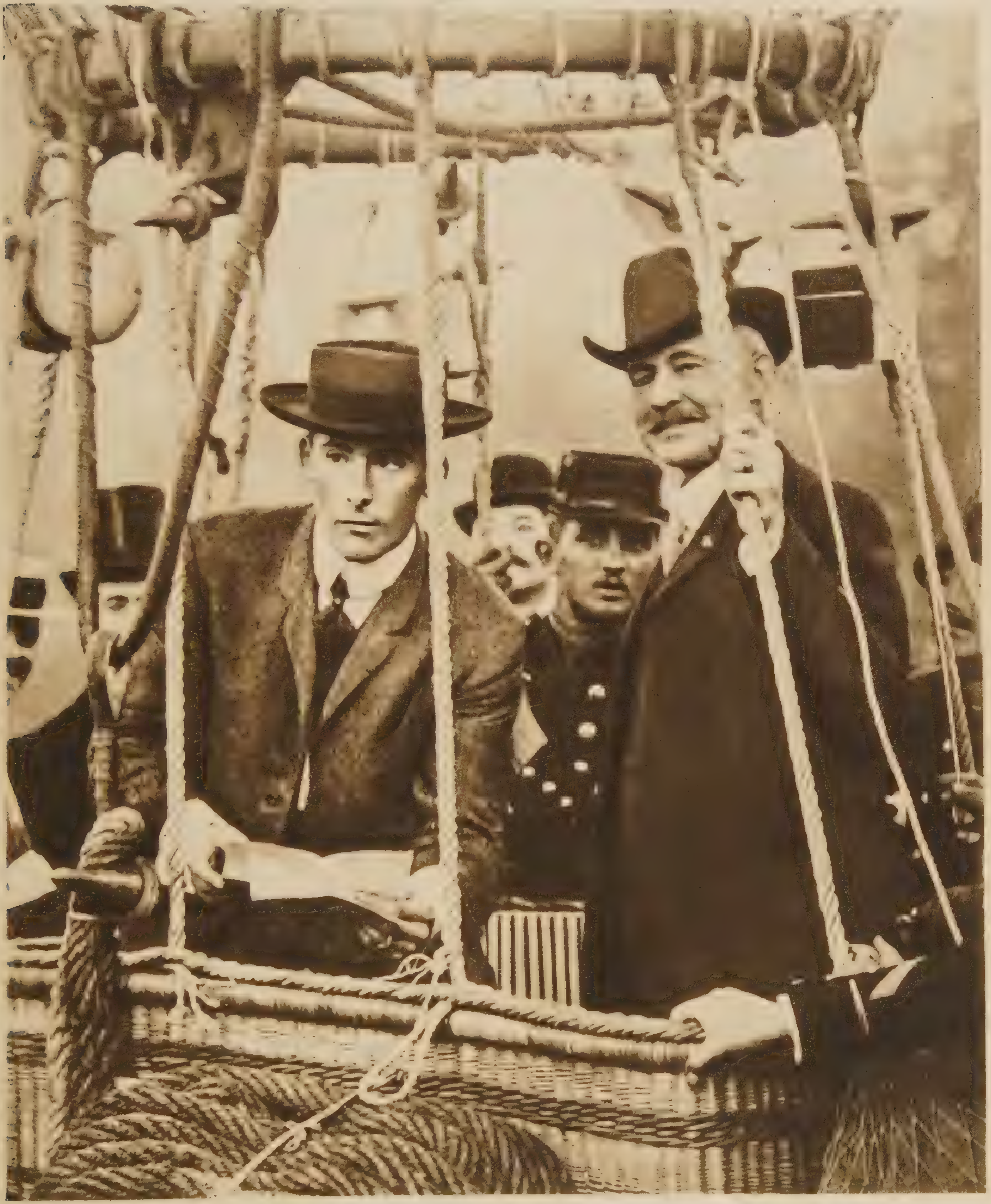
Sixteen balloons were in this first race, representing seven different nations—America, England, France, Belgium, Germany, Italy and Spain. The "*United States*," which started twelfth, rose from the Place de la Concorde in Paris at 4.55 P.M., September 30, and landed near the manor-house of Flying Dales at 3.12 P.M. next day.

Lieut. Lahm and Major Hersey were received with much cordiality by the squire and his good people, the former remarking "An earthquake could not have caused more excitement in the neighborhood than had the landing of the balloon."

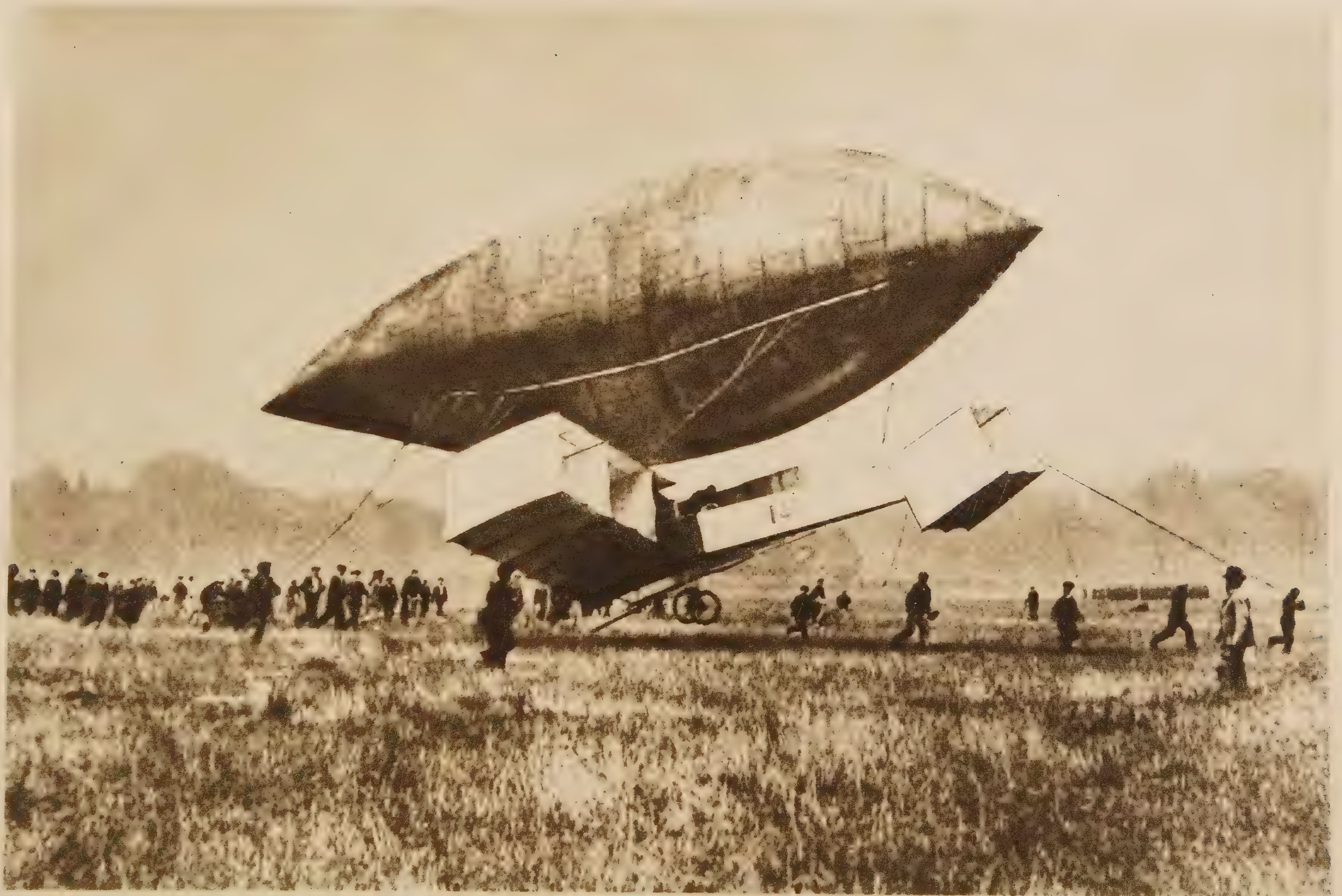
MAN-RAISING KITE IN THE FRENCH ARMY

France was showing much interest in the man-raising kite, in the manipulation of which Lieutenant Bassel of the French Army had gained great skill. This "Cerf Volant" was a forerunner of the airplane and served to teach experimenters much about the force and peculiarities of air currents. The print (below) is from the E. C. Vivian Collection in England.

Lieut. LAHM WINS *First International* AIR TROPHY—1906

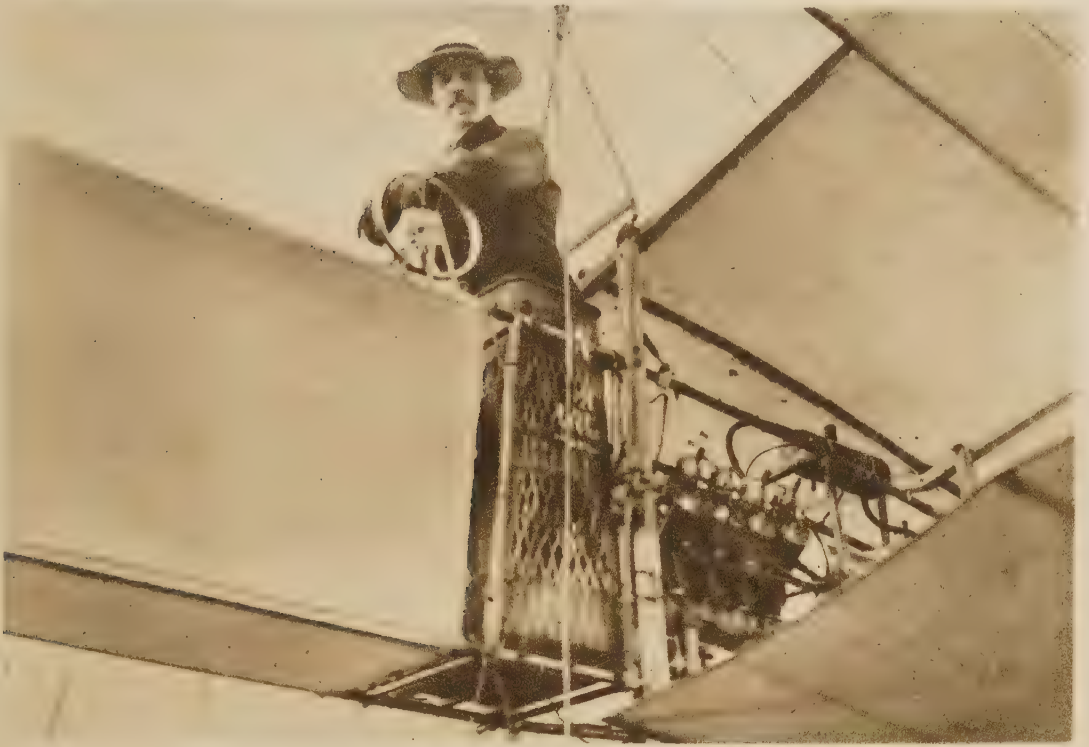


START OF THE FIRST GORDON BENNETT BALLOON CUP RACE—Lieutenant Frank P. Lahm, U.S.A. (left) and Major Henry B. Hersey, U.S.A. (right) about to ascend from Paris in the Balloon Race in which they brought the cup to America. Lieut. Lahm was the first American to bring an international aerial trophy to the United States. Print in the Brown Brothers Collection.



PREMIER AIRSHIP PILOT IN FRANCE NOW BECOMES FIRST AIRPLANE PILOT IN EUROPE—SANTOS-DUMONT
Historic print of the famous Airplane being towed by a Dirigible into the Air—Original now in possession of the French Government.

SANTOS-DUMONT *Makes First Airplane Flight in Europe*—1906



SANTOS-DUMONT in HIS NEW ROLE as an AIRPLANE PILOT

Photograph in Brown Brothers Collection

ALBERTO SANTOS-DUMONT, brilliant Brazilian aeronaut who made Dirigibles an everyday sight to Parisians (1898 on), holds the honor of making the First Airplane Flight in Europe (1906).

He equipped a Hargrave box kite, which he built, with an 8-cylinder, 50-horsepower Antoinette motor of the type used in his airships, and appeared at the Bagatelle Flying Field with this attached to the envelope of his Airship No. 14 (August 22, 1906).

This plane he called "14 Bis" (Second 14) and attempted to fly it with the aid of the airship's lifting power.

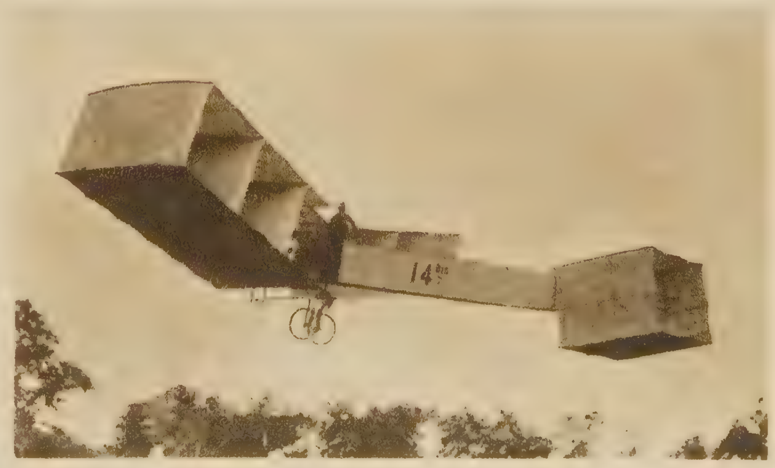
Two months later (October 23,1906) Santos-Dumont made Europe's first airplane flight in "14 Bis" at the same field, without the airship's aid, flying nearly 200 feet at 25 miles an hour. By this he won the prize of 3,000 francs which Ernest Archdeacon, Parisian sportsman and aerial enthusiast, had placed in the hands of the French Aero Club (early in 1903), to go to the first person to fly 25 meters.

Santos-Dumont was but one of many French heavier-than-air experimenters. Archdeacon himself, Bleriot, Farman, the Voisin brothers, Esnault-Pelterie, Vuia, Delagrange, Cornu and others were hard at work with gliders and looking ahead to powered flight even before the Wrights flew at Kitty Hawk. Others had done well gliding, but the Brazilian was first to make use of a motor. We shall see Santos-Dumont later bringing out his odd little "Demoiselle" monoplane and making record cross-country flights.

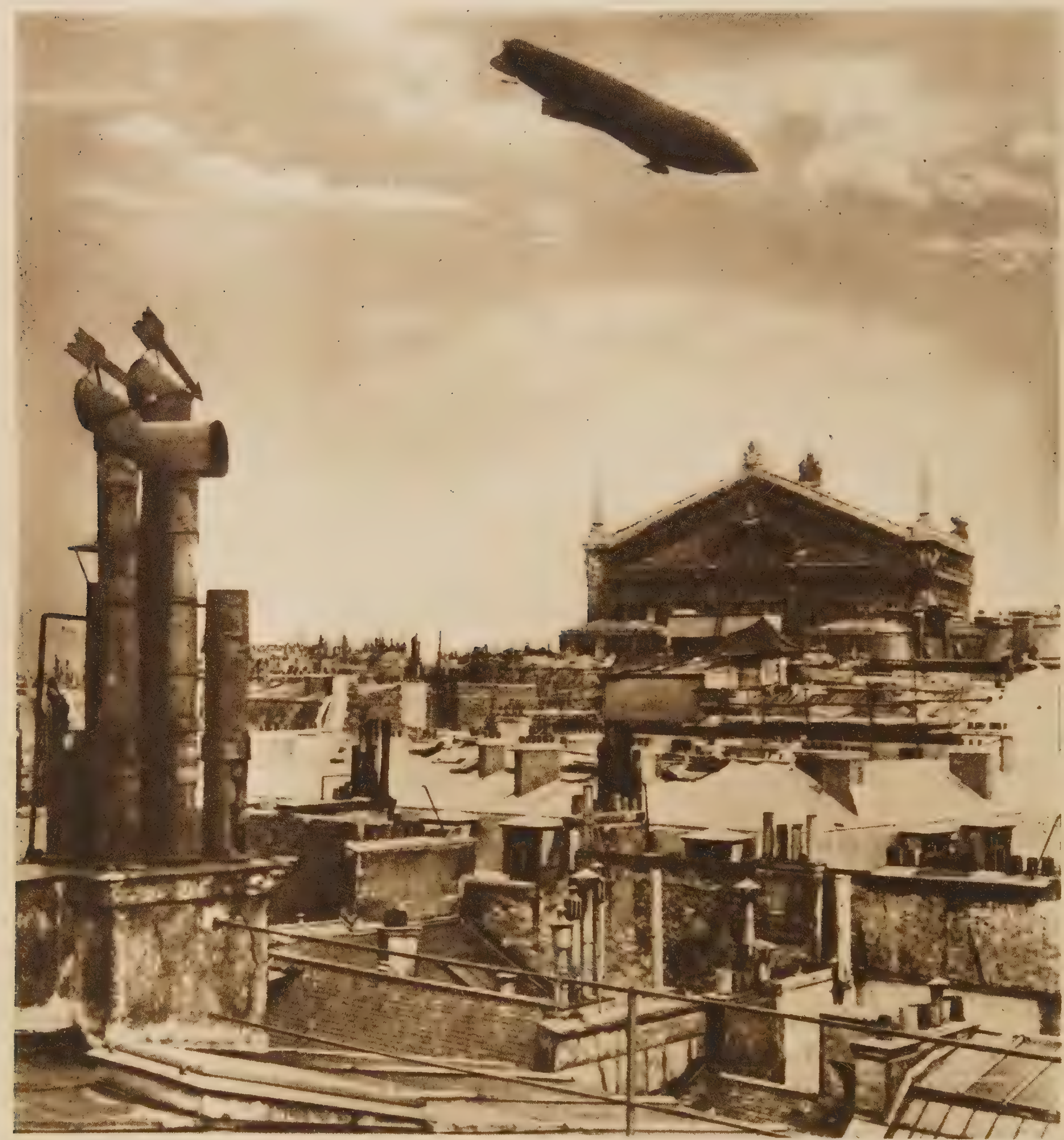
The First Airplane Flight in Europe (right) shows Santos-Dumont at the wheel of his plane, "14 Bis," which he flew tail first. The inventor termed this an "Aeromobile" and at once gave the details of his invention to the world.

He had pioneered in motor ballooning and now became the airplane pioneer. His first flights began the sequence of public flying which quickly established the French nation at the front in world aviation.

Santos-Dumont made four flights in "14 Bis" before a large and enthusiastic gathering, his last flight winning the prize of 1,500 francs offered by the Aero Club of France for the first flier to fly 100 meters. Santos-Dumont flew 220 meters (about 700 feet) in 21 seconds (November 12, 1906).



"*La Patrie*" SWEPT *to* DESTRUCTION *Over* ATLANTIC—1907

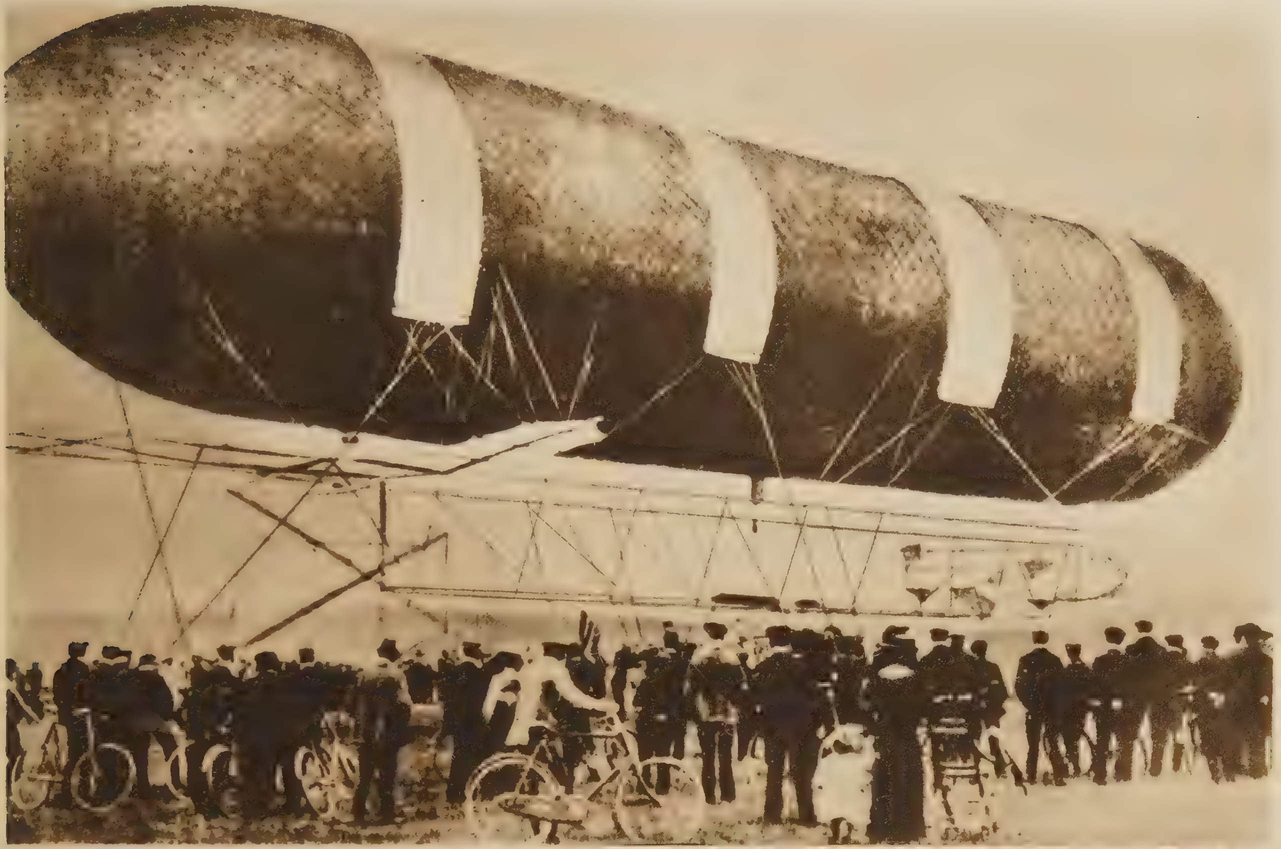


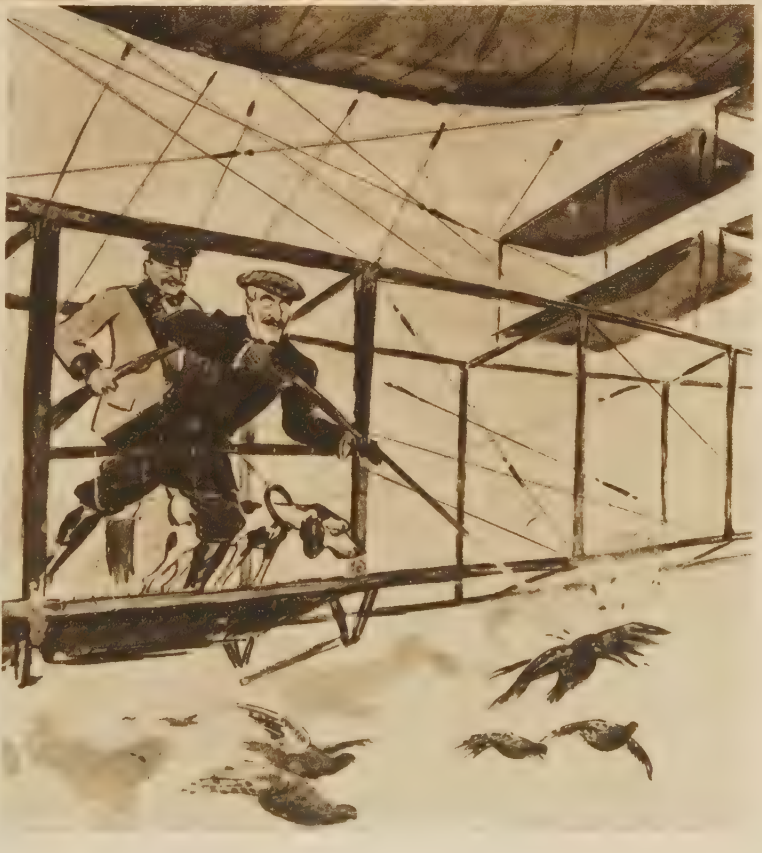
FRENCH ARMY AIRSHIP SAILS OVER THE QUARTIER DE L'OPERA IN PARIS
Historic print in the archives of the French Government with duplicates in the British Museum and in the Library of Congress at Washington.

THIS great dirigible "La Patrie," third airship of Lebaudy design, was the first built by the French Government (launched 1906) for its aerial navy, which began with the purchase of Lebaudy's second ship, (1904). Moisson, near Paris, now became the official aeronautical center, under supervision of the aeronaut, Juchmes.

"La Patrie" made numerous successful and speedy air voyages and maneuvered with the Army. After maneuvers at Verdun, she was torn from insecure anchorage by a tumultuous wind, which overpowered 200 soldiers who tried to hold her (November 1907). Bounding into the sky, the great ship was swept before the gale across France, England and Ireland—to disappear over the Atlantic. No trace of her ever was found.

ENGLISH ARMY *Builds* FIRST *Semi-Rigid* AIRSHIP—1907





ENGLAND'S FIRST AIRSHIP, a semi-rigid, was built (1907) by Colonel Capper, Royal Engineers, and S. F. Cody, American airman who later made the first airplane flight in England, at the Government balloon factory at Farnborough. Fifteen thicknesses of goldbeater's skin was used for the envelope, 25 feet in diameter.

The ship was named "Nulli Secundus," but she proved the victim of a heavy rainstorm, which destroyed her soon after she was launched. Other such dirigibles followed later that year (1907). Airship print (above) in Jones Collection of U. S. Army Air Corps.

M. HENRI DEUTSCH de la MEURTHE, devoted and liberal patron of aeronautics, came forward upon the loss of "La Patrie" (opposite page) and at once placed his sturdy dirigible, "Ville de Paris," at the disposal of the French War Ministry.

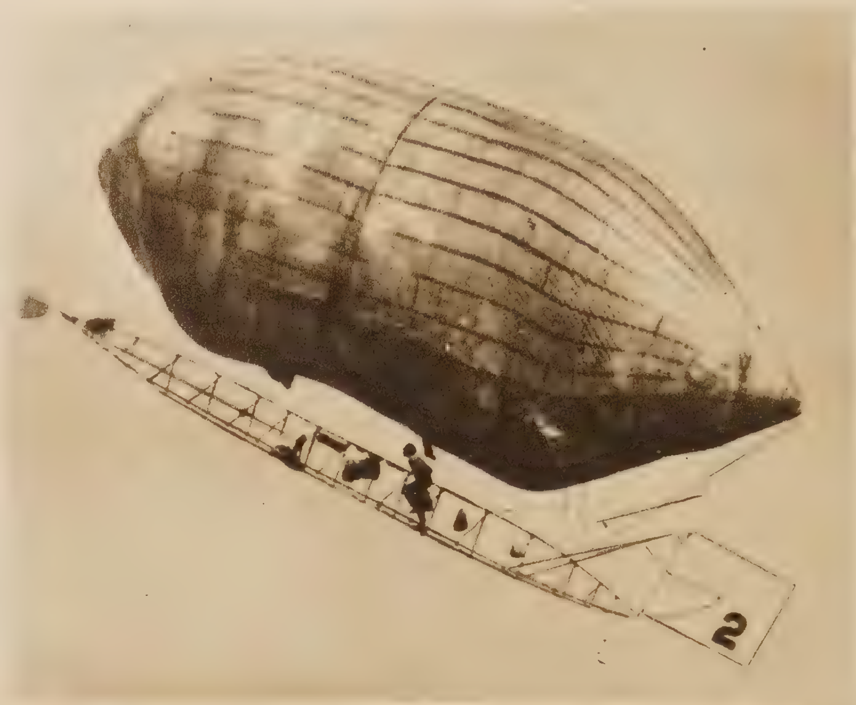
Different in type from the Lebaudy airships, and with stabilizing planes above her car, fore and aft, the "Ville de Paris" proved well adapted to military purposes. The French cartoon (right) caricatures M. Deutsch as an aerial huntsman, shooting birds from his airship. Original print preserved in the Bibliotheque National in Paris.

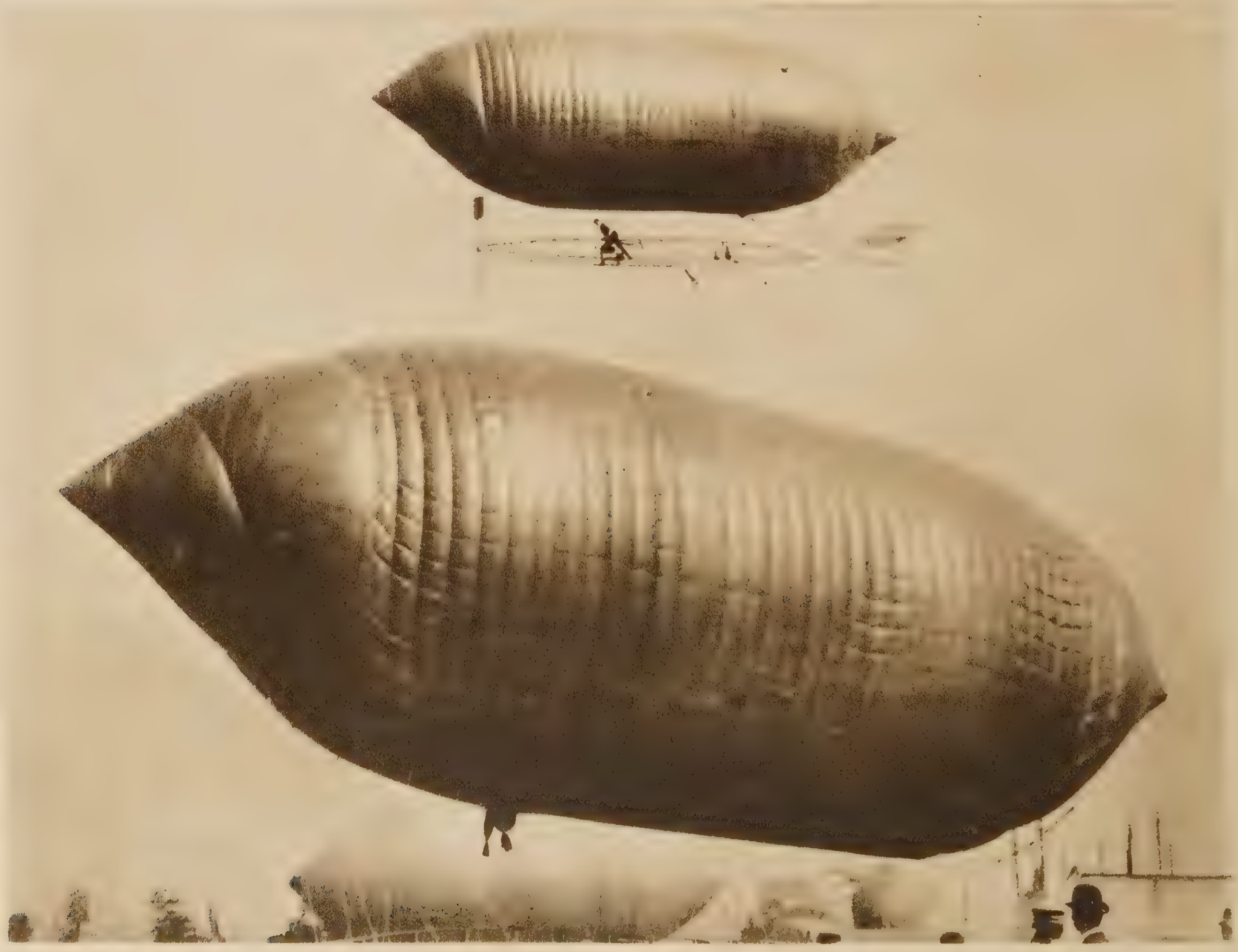
Daring AERONAUTS *Race* AMERICAN AIRSHIPS—1907

BALDWIN AIRSHIPS now took the lead in America. The intrepid airmen who flew them stepped back and forth on the bamboo catwalk beneath to maintain equilibrium or send their ships up or down.

This photograph (right) shows Capt. Horace B. Wild—one of Baldwin's earliest airship pilots and who has since become of note as an airplane pilot—maneuvering his perilous "Sky Buggy" over the city of Chicago (1907) where he made many spectacular exhibitions. Print in the Acme Collection.

The photograph (below) shows Lincoln Beachey winning an airship race from Roy Knabenshue at the air meet of the St. Louis Aero Club (October, 1907). Both made remarkable records with these small airships. Print in the International Collection.





RECORDS *Made in First* GREAT *American* AIR MEET—1907

THE BALLOON RACE for the Lahm Cup—donated by F. S. Lahm, father of Lieut. Lahm, who won the initial Gordon Bennett Balloon Cup Race (Paris, 1906)—was a feature of this First Great American Air Meet, held by the St. Louis Aero Club (October, 1907).

This trophy was won by Capt. Charles D. F. Chandler, U. S. A., and J. C. McCoy, who piloted the United States Army balloon, "Signal Corps No. 10," out of St. Louis late in the afternoon of October 17 and landed without mishap in the midst of the West Virginia coal mining district, in Walton, Roan County, early in the morning of October 19. They had traveled 475 miles.

This print (right) is an official record of the U. S. Army Air Corps—in the Jones Collection—and shows Chandler and McCoy just landing by the side of a great culm pile near a Walton mine mouth, amid suppressed excitement of the miners and their friends, most of whom were quite unfamiliar with balloons.

The print (below) is from the Underwood and Underwood Collection and shows Capt. Chandler (left) and McCoy making final preparations just before ascending from St. Louis.

German PILOT *Breaks World's* RECORD *in Balloon* RACE—1907

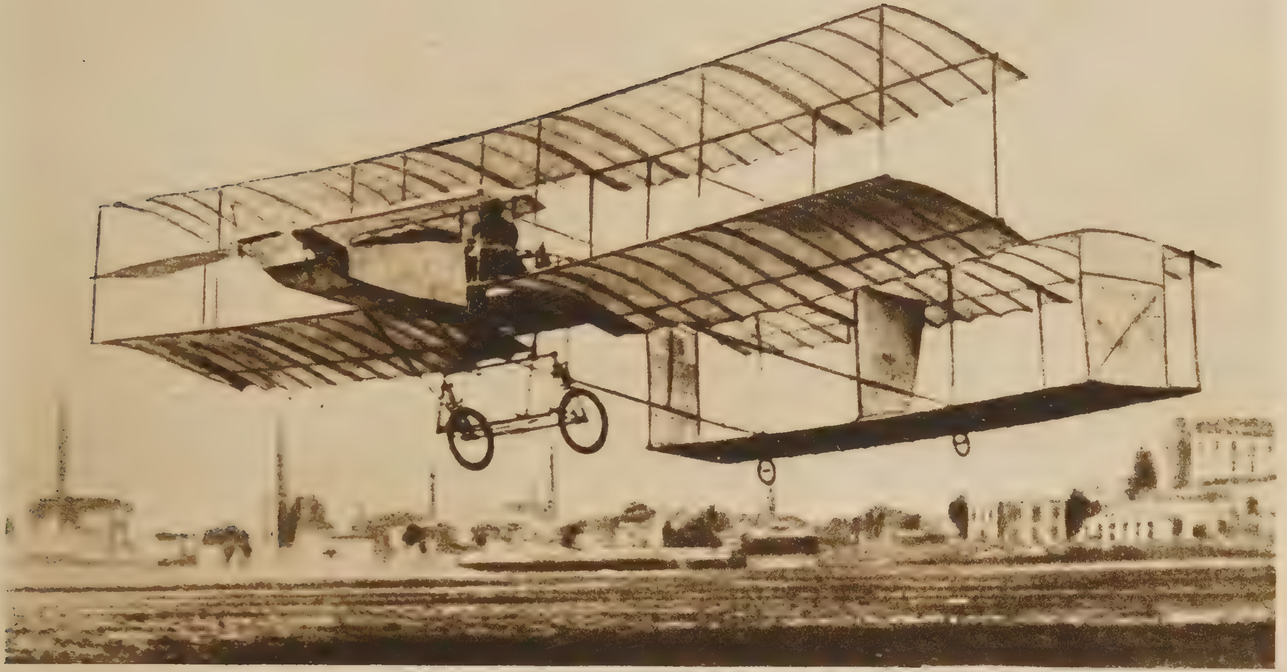
THE WORLD'S RECORD was broken for the time of a balloon in the air in the second Gordon Bennett Balloon Cup Race, which was also a feature of the big air meet of the St. Louis Aero Club (October, 1907).

Alfred Leblanc, French entrant, established a new world's record for balloon duration, remaining aloft 44 hours and 2 minutes.

Germany won the event. Dr. Oscar Erbsloeh and H. H. Clayton piloted the great balloon "Pommern" from St. Louis to Asbury Park, New Jersey—876¾ miles in 41 hours—on October 21 and 22, winning by exactly 6 miles from M. Leblanc, who landed his balloon "Isle de France" at Herbertsville, New Jersey.

Portrait print of Dr. Erbsloeh and Mr. Clayton (right) is in the Brown Brothers Collection. Print (below) showing the landing of the "Pommern" at Asbury Park is in the archives of the St. Louis Aero Club.

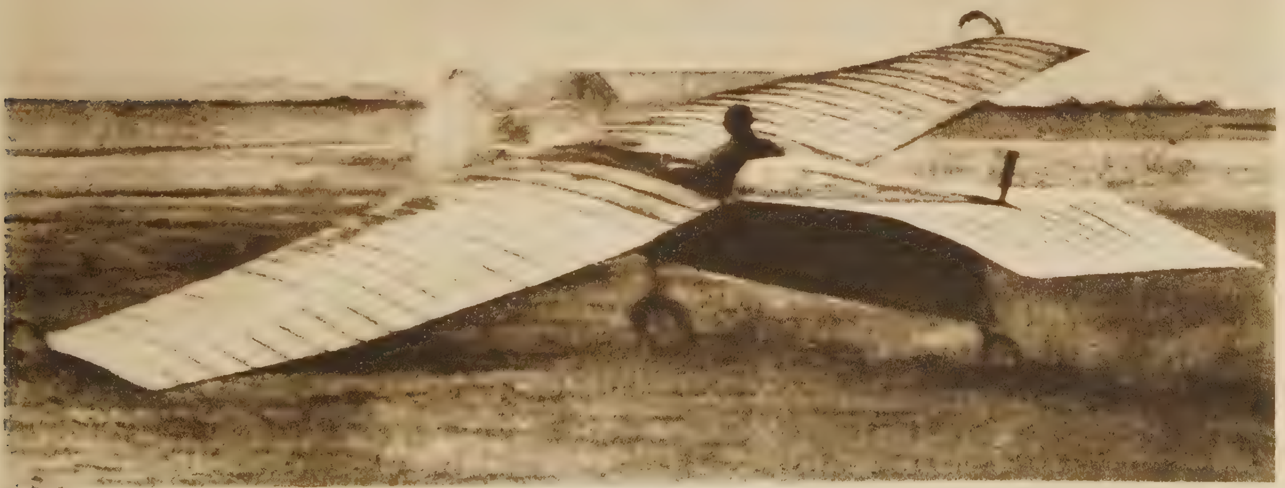
French AIR PIONEERS *Make Rapid* PROGRESS—1907



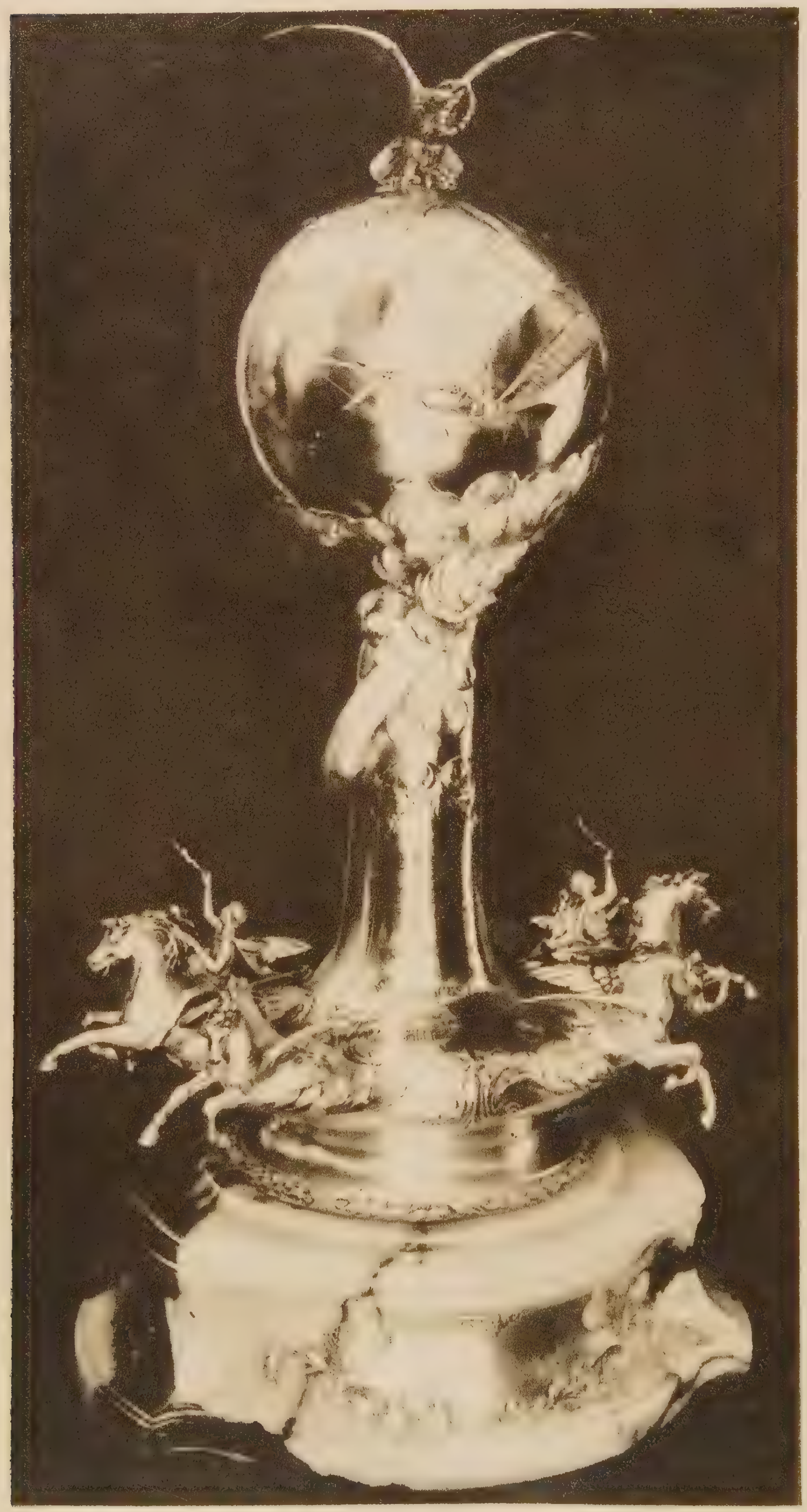
HENRI FARMAN, GREAT FRENCH AIRMAN, BREAKS RECORDS IN PIONEER AIRPLANE
Original prints in the archives of the French Government and the Bibliotheque National in Paris.

FARMAN (above), French airman destined to make a great name for himself in aviation in Europe and America both, is shown here in his first striking aerial feat—flying his Voisin biplane a distance of 770 meters at a speed greater than 50 miles an hour, at Issy-les-Moulineaux, (October 26, 1907). This far surpassed Santos-Dumont's record of 20 meters. But it was only the beginning for Farman, whom we shall see later flying the first closed kilometer in France—to win the Deutsch-Archdeacon prize of 50,000 francs.

ROBERT ESNAULT-PELTERIE (below), also of prominence in early French flying, is shown (1907) in his "R. E. P." monoplane. He built wings of sufficient strength to withstand strain in the air without bracing wires, which he believed gave air resistance out of proportion to their usefulness. Esnault-Pelterie was years ahead of his time, his idea being basic with the stream-lined metal monoplanes to come long afterward. It will be noted that both Farman and Esnault-Pelterie favor wheels on their under-carriages, a practice which originated in France.



AMERICA *Encourages Airmen by Offer of* EPOCHAL *Trophy*—1907



AMERICA'S FIRST AIR TROPHY

"The Blue Ribbon of the Air"

This trophy (1907) commemorated the flight of the Langley aerodrome (1896) in a leading feature of its striking design.

It was offered by the Scientific American to be competed for by heavier-than air flying machines at the Jamestown Exposition — under the auspices of the Aero Club of America.

Glenn Curtiss eventually won the Scientific American trophy with his notable Fourth of July flight (1908).

There were two entrants for trials at Jamestown (1907)—but no flights occurred that year—either there or during America's first air meet at St. Louis (October, 1907).

Conditions the first year called for a straightaway flight of one kilometer (3,280 feet), and for permanent possession the trophy must be won three times. The plan was to vary the conditions, and the second year to require a circular flight.

The Wright brothers had already learned to turn and circle in the air, but that fact was not generally accepted as yet.

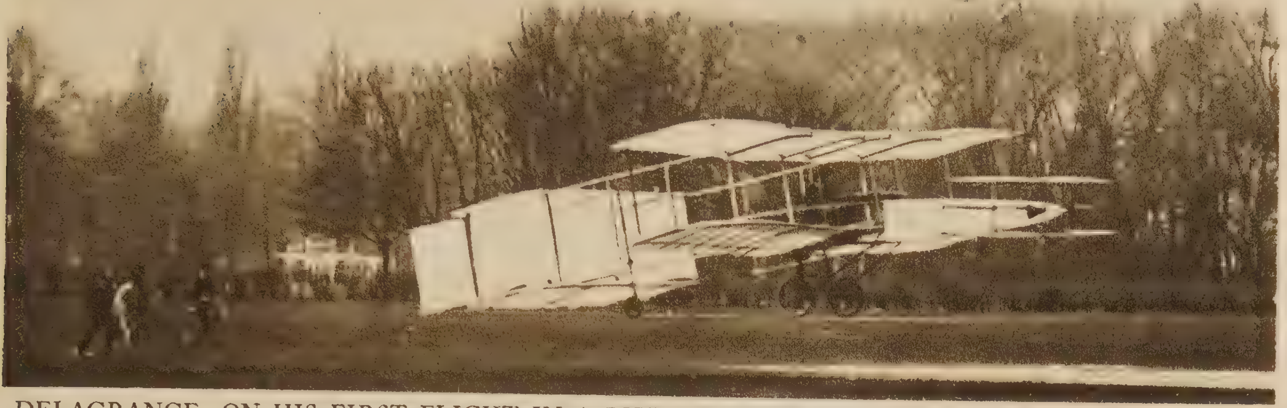
They had established human flight at Kitty Hawk (1903) and, after two years of further experiment, announced that they had perfected their airplane.

The Wrights had not yet made a public flight and a flight of a kilometer or more at Jamestown would have been received with great eclat.

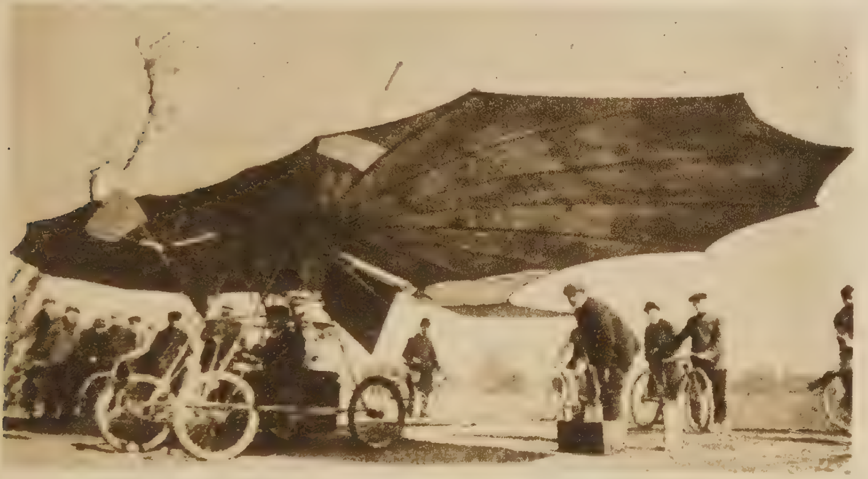
The trophy was of silver on a handsome onyx base, 32 inches in height.

Photograph in the Brown Brothers Collection.

French AVIATORS *and German* AERONAUTS *Active*—1907



DELAGRANGE, ON HIS FIRST FLIGHT IN A BIPLANE—HE WAS LATER KILLED AT BORDEAUX



VUIA MONOPLANE ON ITS TEST TRIALS IN PARIS

TWO EARLY FRENCH AIRMEN here shown (1907) were figures of importance in the first days of flying in France—Delagrange (above) and Vuia (left).

Leon Delagrange, sculptor-inventor, was an outstanding figure in French aviation (1907), when he first flew a biplane. He was killed in an airplane accident at Bordeaux (1910). He carried on a keen rivalry with his close friend, Henri Farman. Delagrange was first to carry a passenger into the air; and he took up the first woman to fly.

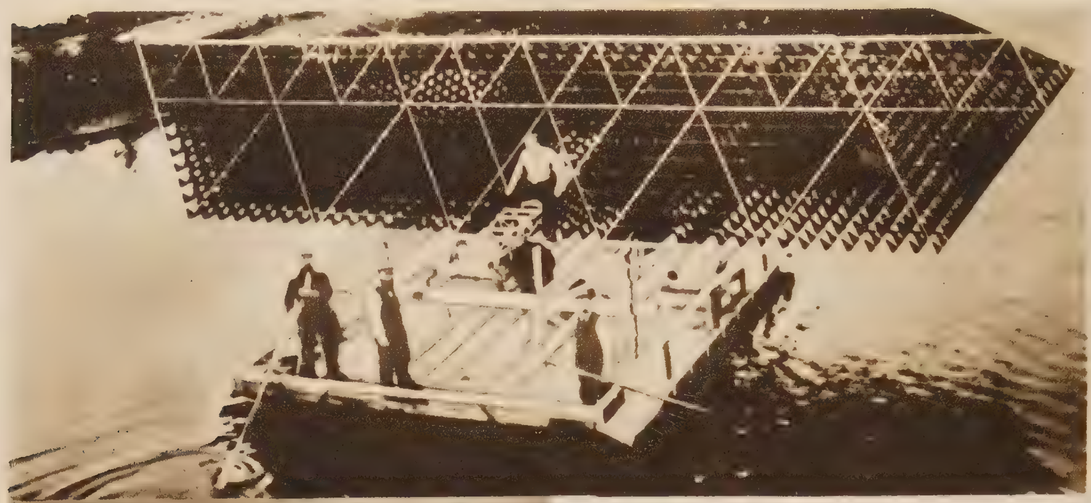
Vuia produced the odd-looking monoplane pictured (left), with its flying tricycle. Prints in Brown Brothers Collection.

MAJOR VON GROSS of the German Army, commander of the balloon battalion at the German aeronautic base at Tegel, near Berlin, designed the Gross Auto Balloons (shown below), a succession of which (beginning 1907) were built under his supervision for maneuvers with the German troops.

Kaiser Wilhelm financed Von Gross. The Kaiser's brother, Prince Henry, and the German Crown Prince were passengers on numerous successful air voyages. A friendly rivalry sprang up between Major Von Gross and Major Von Parseval of the Bavarian army, whose motor balloons were also used in maneuvers with the German military forces.

MAJOR VON GROSS, COMMANDS THE FIRST GERMAN BALLOON BATTALION (below)

GRAHAM BELL *Experiments with* TETRAHEDRAL KITE—1907



TOWING BELL'S GREAT KITE ACROSS the Bras D'Or Lakes before SELFRIDGE'S FLIGHT

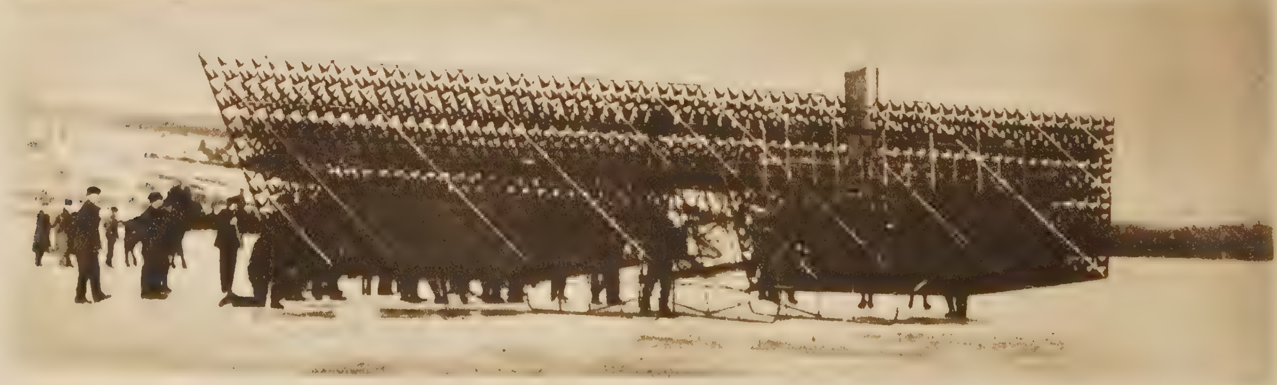
FAMOUS PRINTS FROM ALEXANDER GRAHAM BELL COLLECTION

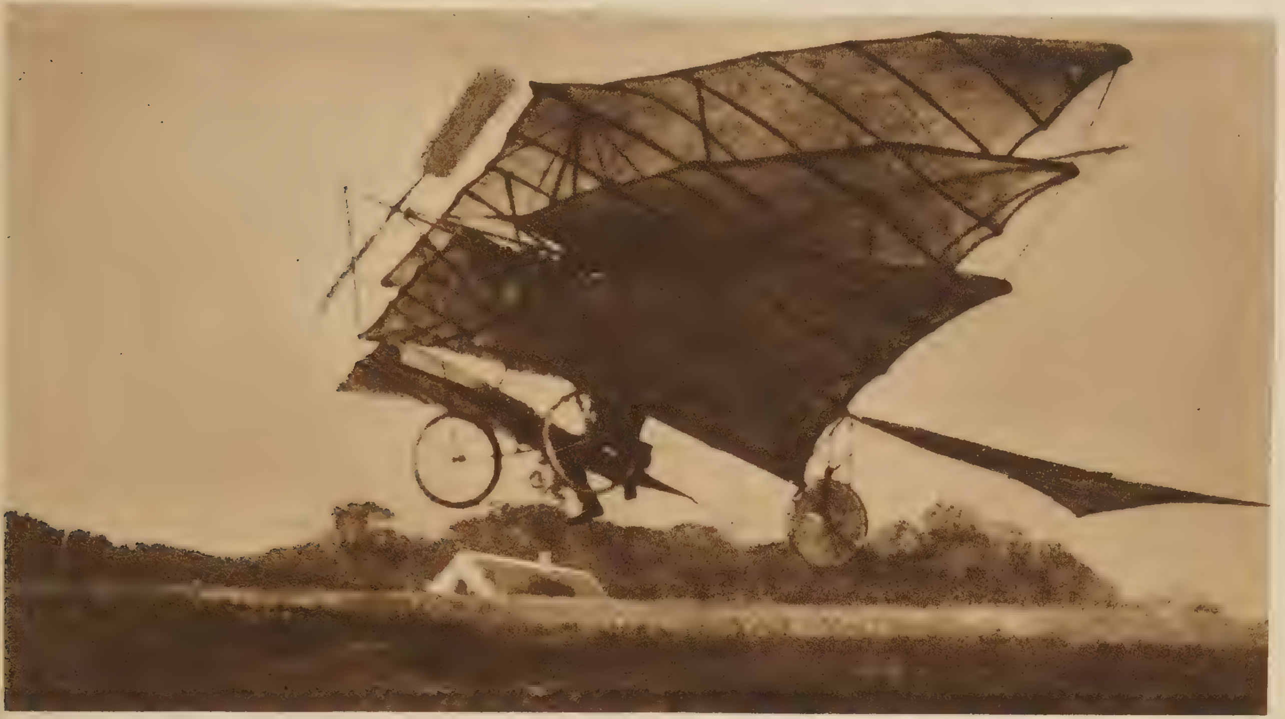
THE distinguished American scientist and inventor came into aviation (1907) by way of great kites made up of tetrahedral cells. With these he conducted scientific experiments at his summer home, Beinn Breagh, near Baddeck, Nova Scotia. "Tetrahedral" means "bounded by four triangular plane surfaces."

Dr. Bell flew these kites over the beautiful Bras D'Or lakes of Cape Breton Island so often and obtained such command of them as to believe they were ready for a light motor. He invited Glenn Curtiss to come to Baddeck and Curtiss accepted (summer of 1907).

Fellow guests at Beinn Breagh were F. W. Baldwin and J. A. D. McCurdy, young Canadian engineers from the University of Toronto, and Lieut. Thomas E. Selfridge of the United States Army. All these will become familiar names as we read the Curtiss story in following pages. So many ideas were developed by this group of five aeronautical enthusiasts that Mrs. Bell suggested they form the Aerial Experiment Association and offered to finance it. They accepted her offer. We shall see how much her generosity really did for aviation.

Lieut. Selfridge (see picture at top) is seated at the controls of the great Bell kite as it is towed across Lake Bras D'Or preparatory to his notable flight (December 6, 1907). The picture (left) shows Selfridge in the air above the lake in his flight of seven minutes. The photograph (below) was made later in the month when the Bell kite took off from the ice for another flight.

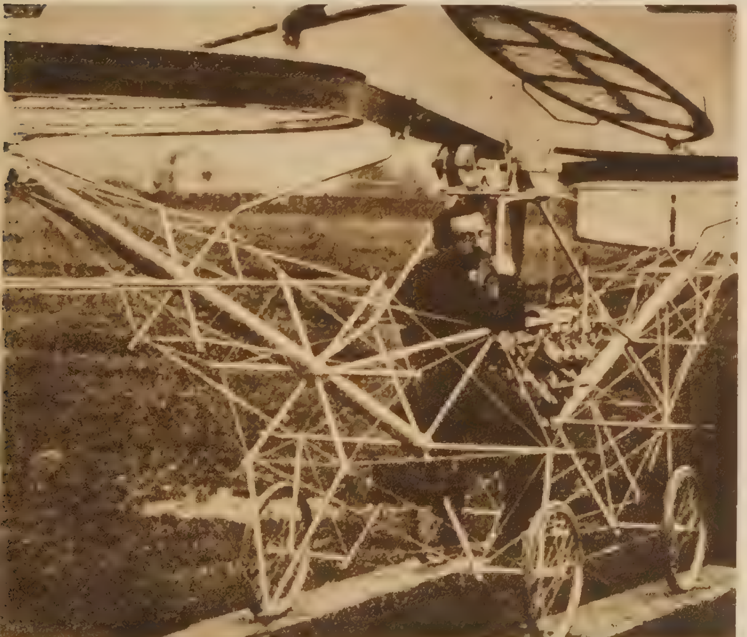




HISTORIC RECORD OF DANISH FLIGHT IN ROYAL LIBRARY AT COPENHAGEN

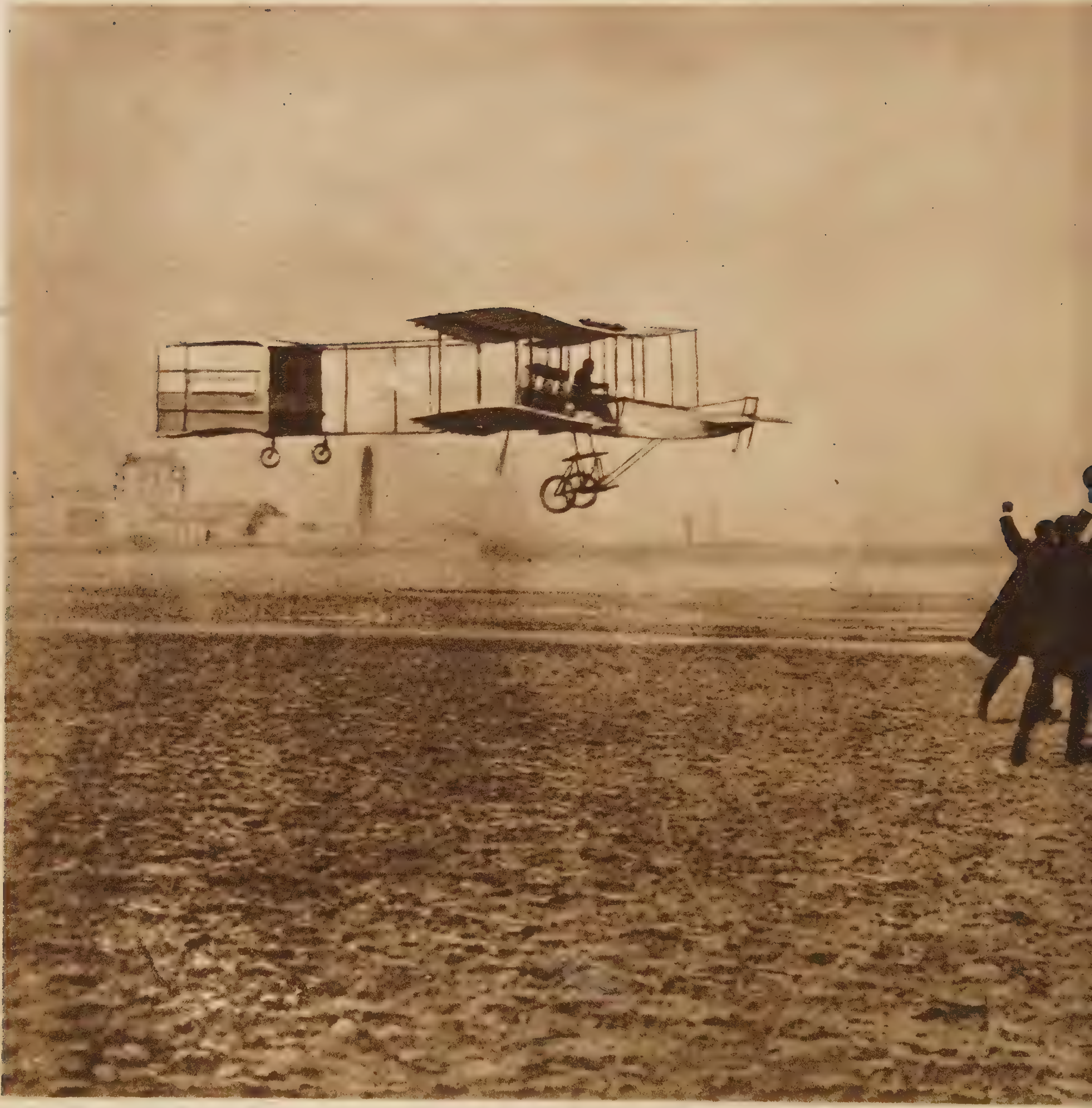
ELLEHAMMER AND CORNU, a Danish flier and a French aviator, ushered in the year (1908) with sensational exploits. Ellehammer's machine was a triplane of a peculiar model (above), a bird wing contrivance with a tractor propeller, a feature decidedly new for Europe and as yet unheard of in America. In this the Danish airman made a flight (January 1908) of 178 meters across the island of Sindholm (Denmark).

Cornu (below) was one of that devoted group of Frenchmen who worked with zeal to advance aviation as a science (1906–7–8). His accomplishments stand out for the spirit in which they were carried on. He was the scion of a family noted in physical science. His airplane was a modified helicopter which had much that was prophetic about it.



Meantime the Wright brothers in America were making great progress at their flying field at Huffman Prairie, Sims Station. The crowds grew so great as to cause them to discontinue public flights (October 1905). The following year (1906) the Wrights filed with the Aero Club of America a statement that in the preceding year (1905) one of them had remained in the air in flight 38 minutes and 3 seconds and had flown a distance of 24½ miles.

They named seventeen persons who had witnessed this flight and, upon investigation by the Aero Club, the claim was verified and the record made official. In the next two years (1906 and 1907) Orville and Wilbur Wright devoted much time to business negotiations, and in May (1907) they resumed experiments at Kitty Hawk in the hope of developing an airplane acceptable to the United States Government.

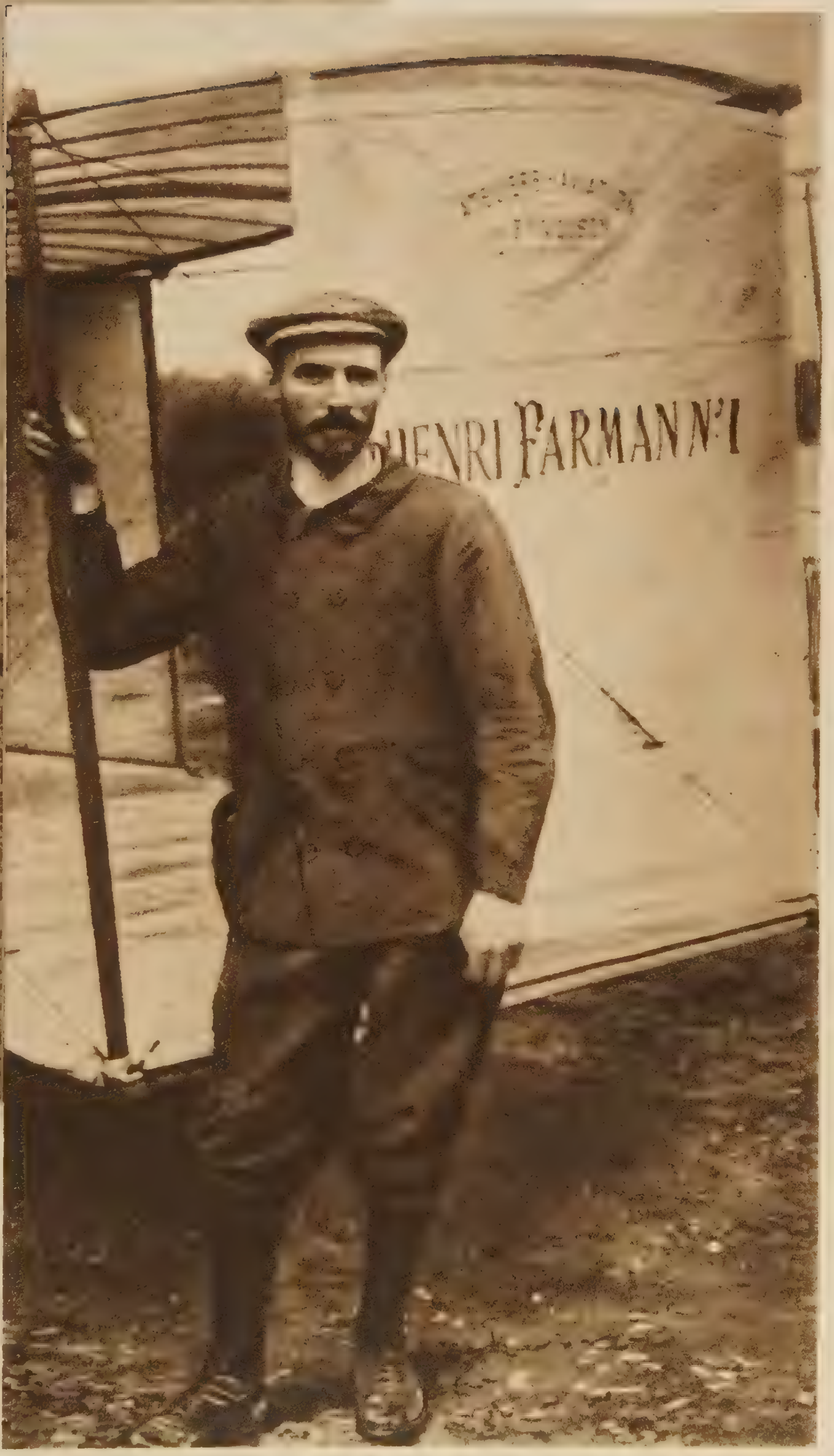


FARMAN FLIES FIRST KILOMETER IN FRANCE TO WIN DEUTSCH-ARCHDEACON PRIZE

AN EPOCHAL DAY in French aviation (January 13, 1908)—when Henri Farman flew the first kilometer (1,0 meters) in the air over Europe. He won the Deutsch-Archdeacon prize of 50,000 francs, offered the year befo by Henri Deutsch de la Meurthe and Ernest Archdeacon. This was to go to the first person to fly 500 mete straightaway, turn in the air and return to the starting point to complete the closed kilometer—a tremendous fe in those earliest days of French flying.

Farman convoked the official committee of the Aero Club of France on the evening before (January 12, 190 to witness his trial the following day. The morning of the 13th dawned fine and calm. At 10 o'clock Farman took gracefully from the Army drill field at Issy and breezed away for the 500-meter mark. Making a sweeping tu around this, he flew straight as a homing bird for the starting flag, where (above) we see his friends hailing him wi hats in air, frantic with joy as he crosses the line in triumph.

Historic FLIGHT *of* HENRI FARMAN—*First* KILOMETER *in* FRANCE—1907



Henri Farman (right) was an English painter ho lived in France. He had been a champion icycle rider and was a leading racing driver of otor cars. The airplane instantly appealed to im. He had been flying a Voisin machine since he previous Summer and during the Fall and arly Winter had made more than 200 flights. Ve have seen how he far surpassed the previous ecord for air distance by flying 771 meters at ssy (October 26, 1907).

G. H. Curtiss

PART VIII

PATHFINDERS *of the* CLOUDS—*Historic* FLIGHTS

PIONEERS *who* BLAZED *the* TRAILS *in* AERIAL EXPLORATIONS

THE WORLD'S FIRST AVIATORS—in the first decade of the Twentieth Century—take their place in history with the world's great explorers. They explored the air with the same intrepid spirit that Columbus, the Cabots, De Gama, and Magellan sailed the seas.

The first honors are conceded by all official records to America with (1) Orville Wright and (2) Wilbur Wright (December 17, 1903) —France witnesses its trial tests with (3) Vuia (March 18, 1906)—Denmark comes into the air arena with (4) Ellehammer (September 12, 1906).

France follows with a group of daring pioneers: (5) Santos Dumont in the first officially recorded flight in Europe (September 13, 1906)—(6) Voisin makes his first power flight (March 16, 1907)—(7) Bleriot appears in his first airplane flight (April 5, 1907)—(8) Farman makes his first flight (September 30, 1907)—(9) Pelterie (October 22, 1907)—(10) Delagrange (November 5, 1907)—(11) Count de la Vaulx (November 19, 1907)—(12) De Pischoff (December 5, 1907)—(13) Boyer (February 8, 1908).

America presents its third aviator in flight on the Western Hemisphere, following the Wrights, and he takes his place in the world records as (14) Christmas at Fairfax Court House, Virginia (March 8, 1908)—(15) Baldwin as fourth American aviator, at Hammondsport (March 12, 1908)—(16) Lieutenant Selfridge (March 19, 1908)—(17) Glenn Curtiss (May 22, 1908)—(18) McCurdy (May 23, 1908).

Great events are now taking place: England, France and Germany are forging ahead with their Dirigibles; the Jamestown Exposition is witnessing many historic airship flights; Aeronautical Congresses are being held; and the Aerial Experiment Association has been formed in America by Alexander Graham Bell, Glenn Curtiss, and their associates (1907).

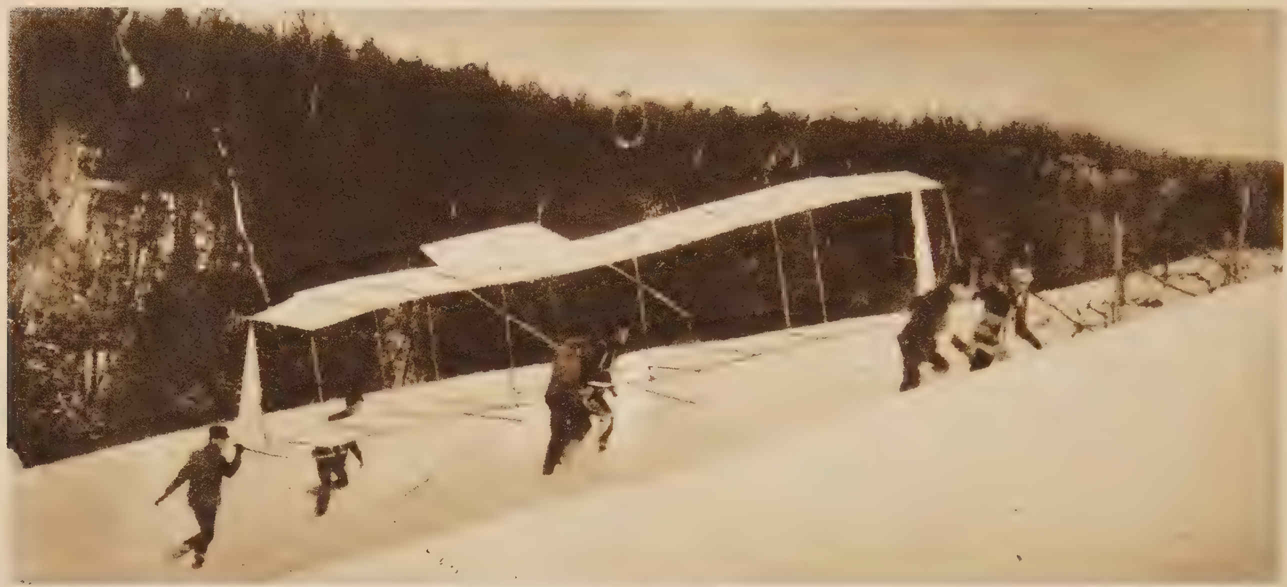
The greatest of these events is the entrance of Glenn Curtiss into the world arena of the air in the "First Officially Announced Public Flight on the Western Hemisphere for the First American Air Trophy" (July 4, 1908).

Curtiss becomes from this event a foremost factor in the development of the Aerial Age. He and his associates fly more than 1,000 miles in 200 flights in this experimental period. Curtiss invents the world's first successful hydro-aeroplane and begins the building of a great aeronautical industry.

Farman is the first to come to America from France to give Exhibition Flights at Brighton Beach (July 31-August 8, 1908). The First Woman in the World to make an Airplane Flight, Madame Peltier, ascends at Turin, Italy. The First United States Government Airship is built by Baldwin and makes its official trial voyage under the Government contract (August 12, 1908).

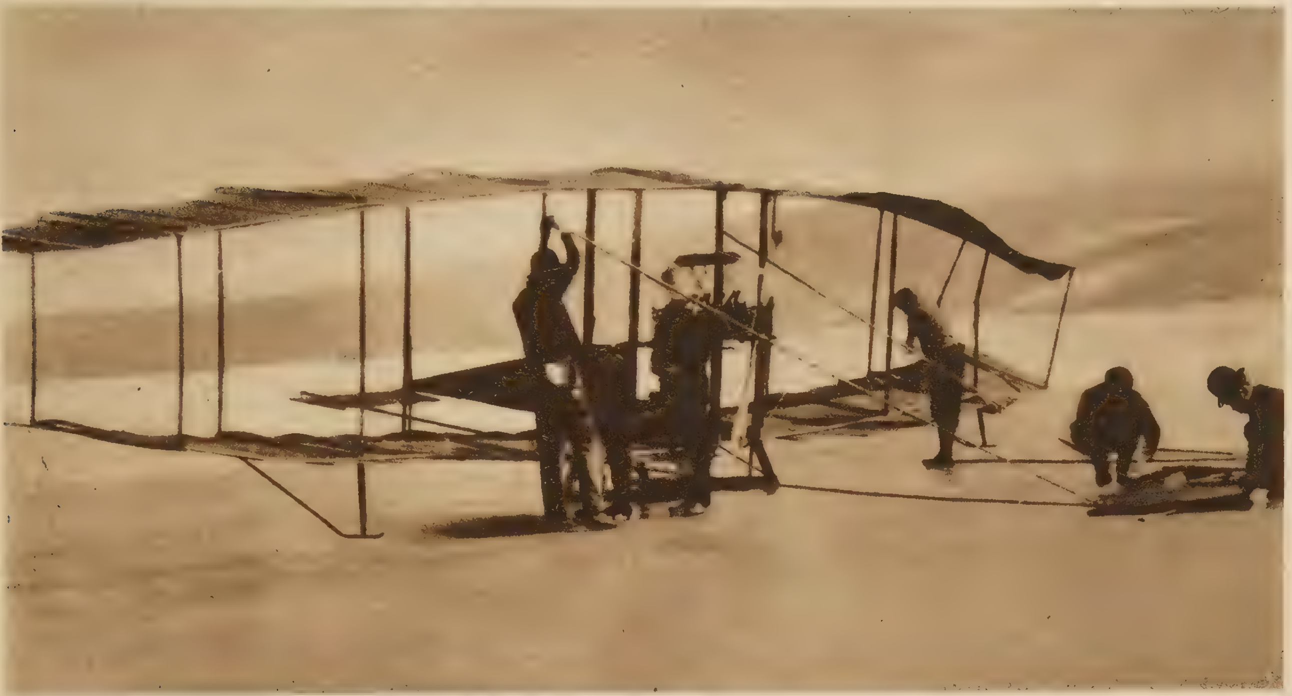
Balloon flights continue in America and Europe, with the Airship forcing its way to the front and the Airplane making rapid progress as we find France and the United States engaging the Wrights in epoch-making demonstrations. The first exchange of international aviators is taking place.

First ORGANIZATION *for* AERIAL *Experiment in America*—1907



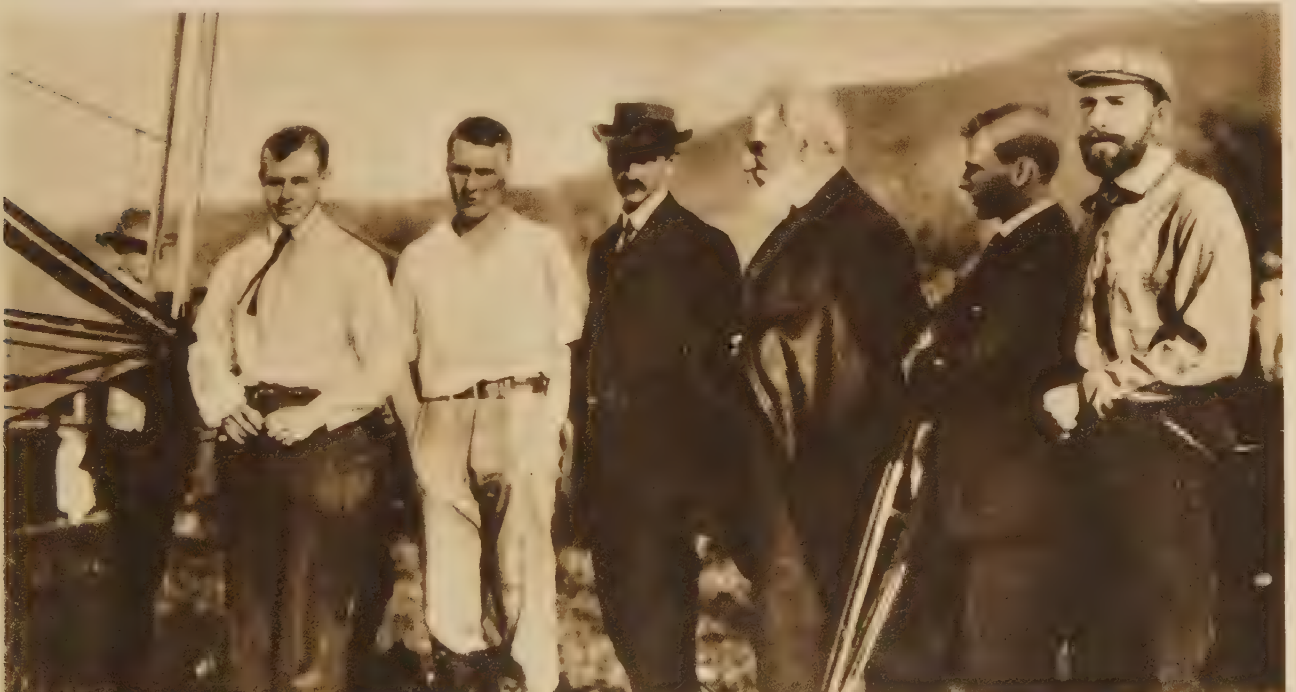
GLENN CURTISS' FIRST GLIDER (above)—The Aerial Experiment Association, sponsored by Mrs. Alexander Graham Bell, moved (January, 1908) from Baddeck, Nova Scotia, where it was formed (1907) to Hammondsport, N. Y. Here Curtiss' engine factory was located. Glenn Curtiss, now Director of Experiments, came down ahead of the other four members. He was in his office with Augustus Post, then secretary of the Aero Club of America, discussing building a glider when Bell's telegram arrived: "Start building. The boys will be down next week." The glider which they built is about to have its first trial with Curtiss aboard (in the lead). The unique photograph (above) is in the Personal Collection of Morton B. Downs.

AERIAL EXPERIMENTERS (below)—Here we see them talking it over with Dr. Alexander Graham Bell after the snow is off the ground. Capt. Tom Baldwin stands just behind Bell.

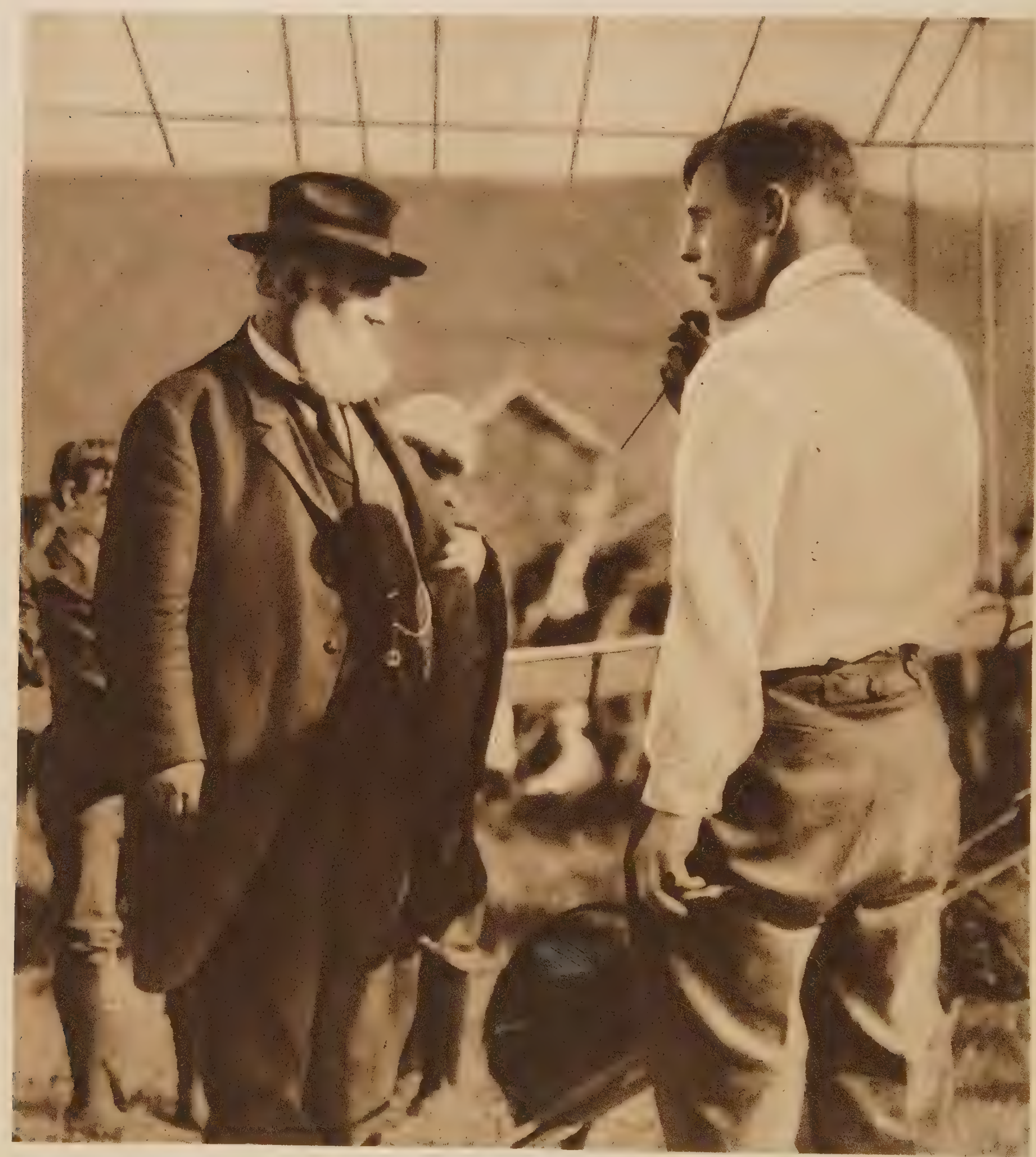


TRIAL OF THE FAMOUS "RED WING" (above)—The Aerial Experiment Association's first airplane, "Red Wing," is being made ready (March 12, 1908), for the "First Public Airplane Flight in America." Launched from Lake Keuka ice, the "Red Wing" was flown by "Casey" Baldwin that Sunday morning—318 feet, 11 inches before a crowd of Hammondsport people and others. The photograph is from the Collection made by Lieut. Selfridge, now the property of his sister, Mrs. H. E. Kellond of Washington.

CELEBRATED GROUP AT HISTORIC FLIGHT (below)—This photograph of the Aerial Experiment Association is in the same notable collection. Left to right—F. W. Baldwin, chief engineer; Thomas E. Selfridge, secretary; Glenn H. Curtiss, chief executive officer; Alexander Graham Bell, chairman; J. A. D. McCurdy (on crutches because of a recent accident), treasurer; and Augustus Post.



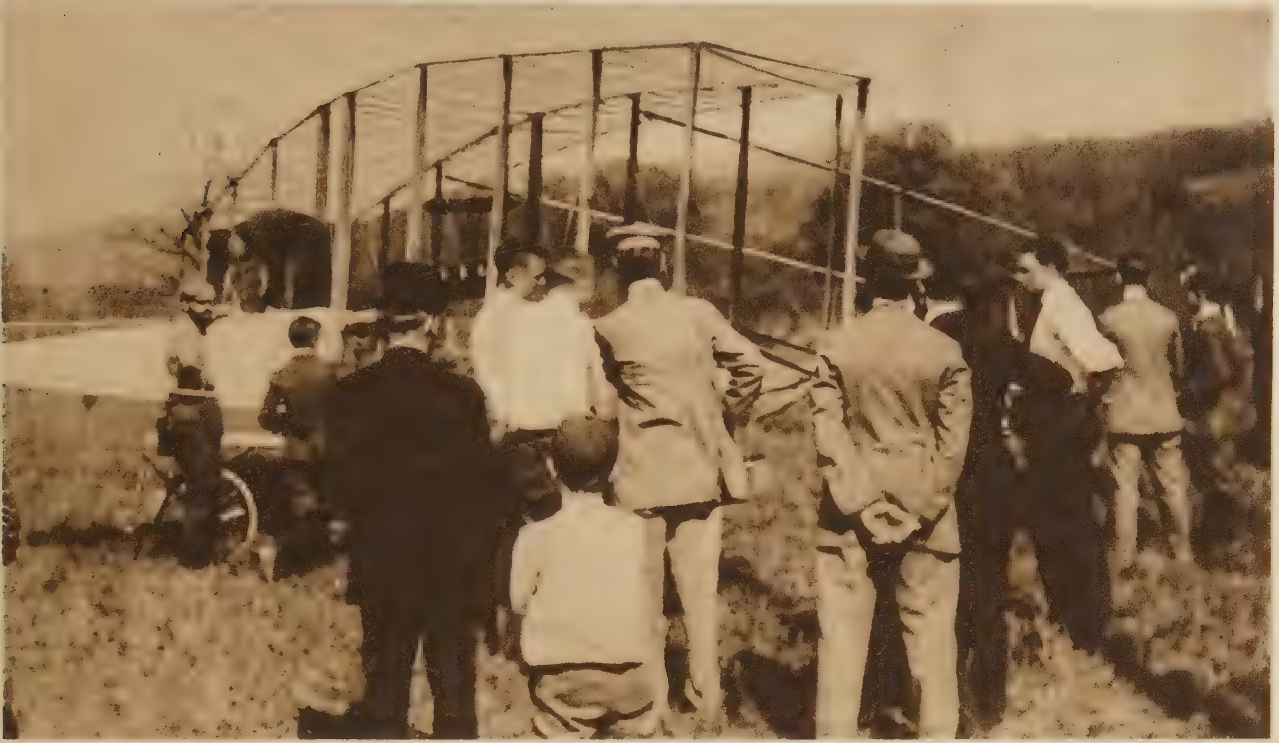
ALEXANDER GRAHAM BELL *Advises* ASSOCIATES—1908



THE DISTINGUISHED SCIENTIST, Dr. Alexander Graham Bell, at Hammondsport, chatting with Frederick W. Baldwin, who designed the second airplane built by the Aerial Experiment Association, "White Wing" (May 1908). Each of the group—except Dr. Bell—was responsible for the design of one plane, though these congenial associates pooled their ideas and all worked on each machine constructed.

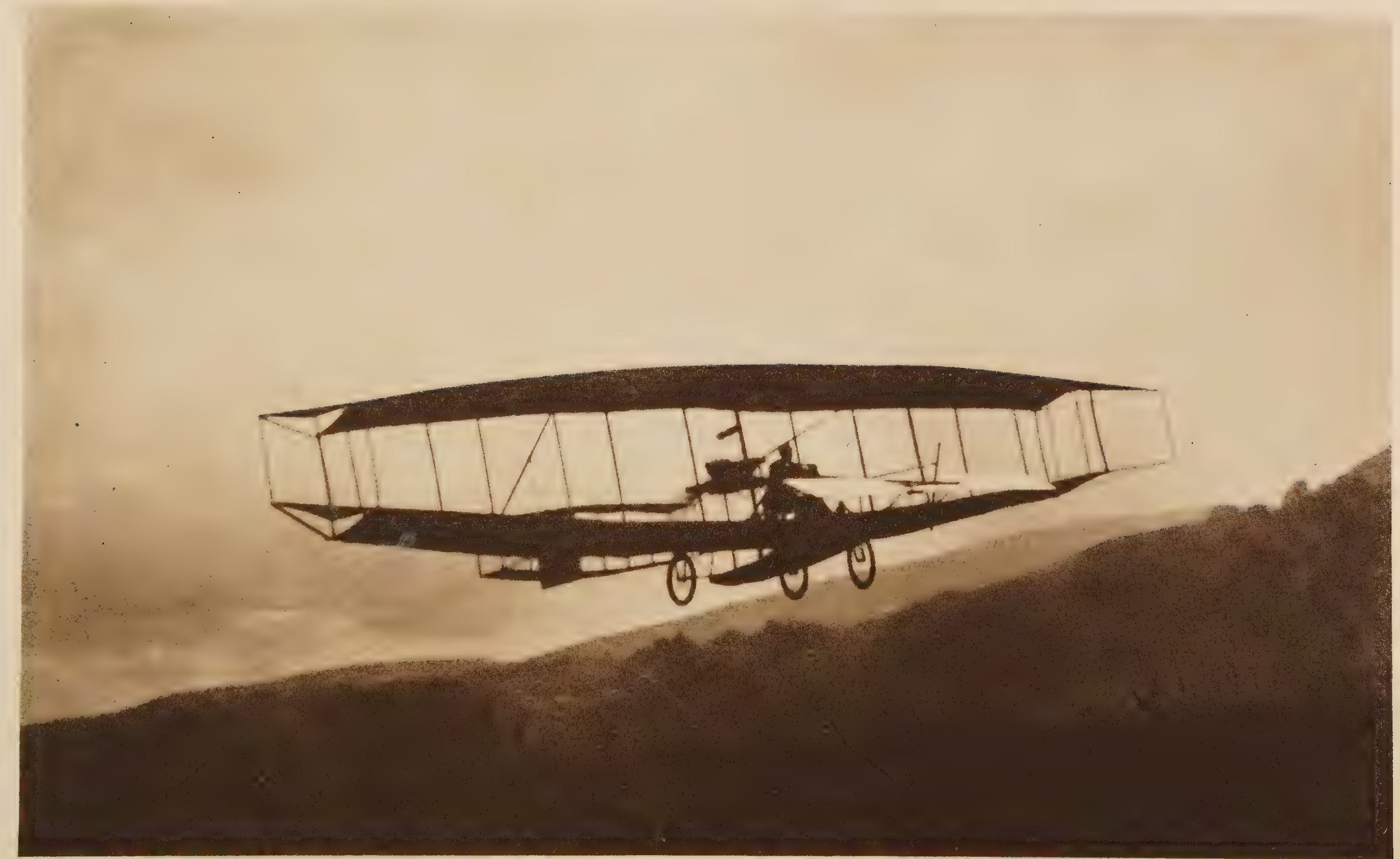
The ice was now out of Lake Keuka and wheels replaced the runners used on "Red Wing." An old half-mile race track nearby, "Stony Brook Farm," became the scene of the Association's flying exploits.

"White Wing" flew well—until they substituted cotton cloth for silk to cover the planes—then it wouldn't fly at all. This led to the first use of varnish to make the cloth covering air proof. Photograph from the Personal Collection of Lieut. Selfridge.



HISTORIC DAYS AT HAMMONDSPORT (above)—Visitors were many at "Stony Brook Farm" that Spring (1908). On the Sunday morning (May 17) in the Selfridge photograph (above) admirers are looking over "White Wing," which is about to fly. Augustus Post, here as official observer of the Aero Club of America, leans against the nacelle in front, while Selfridge, Baldwin (both coatless) and Curtiss (with cap) discuss the plane.

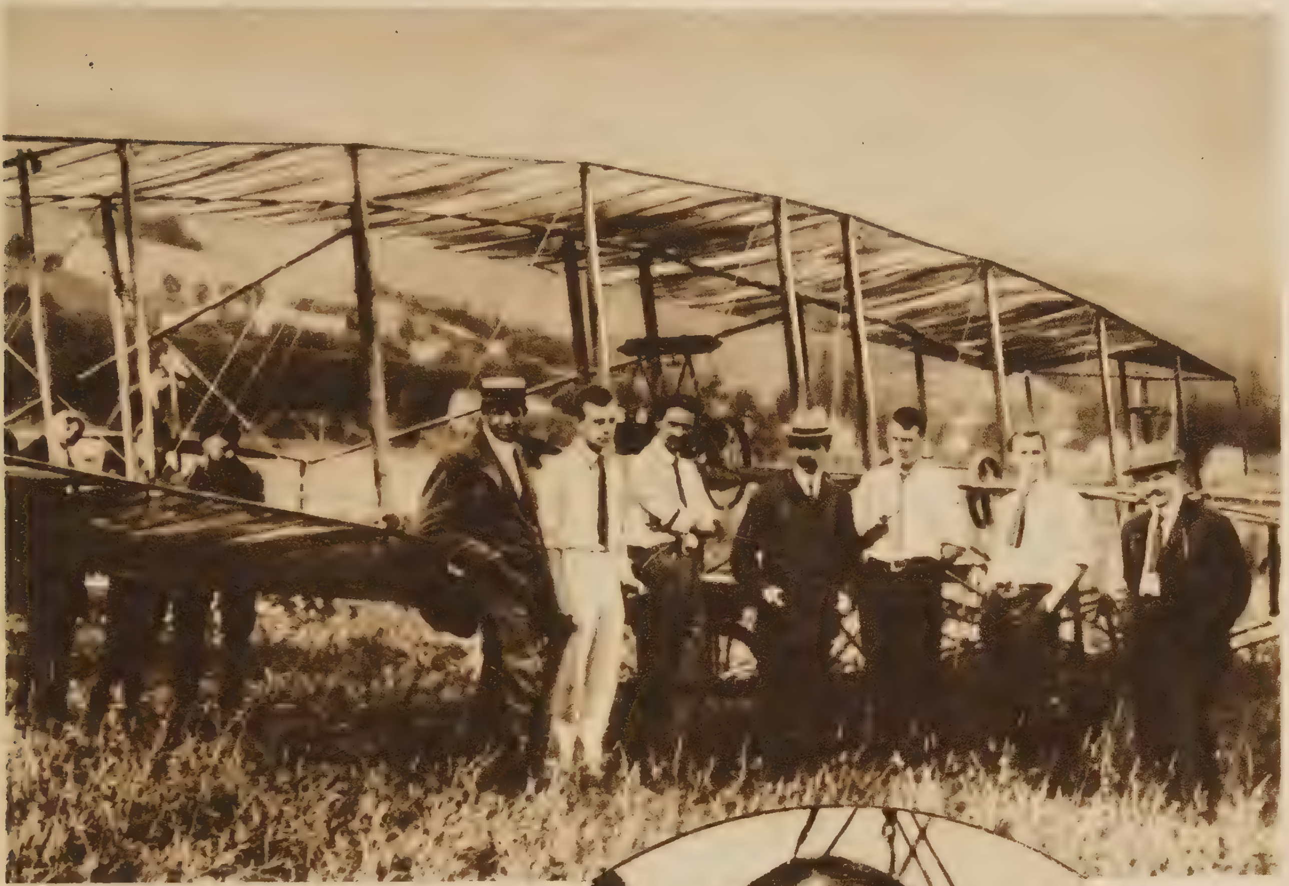
FIRST FLIGHT OF FAMOUS "JUNE BUG" (below)—We here see Curtiss' first flight in the plane he designed, "June Bug" (June, 1908). Nightly discussions of the group in Curtiss' office—dubbed the "Thinkorium"—had brought many improvements and "June Bug" was highly successful in the air. Curtiss had flown "White Wing" 1,017 feet in 19 seconds, and there was every reason to think "June Bug" could do much better. Photograph in the Ernest L. Jones Collection of Army Air Corps.



FIRST OFFICIAL FLIGHT IN AMERICA, INDEPENDENCE DAY (1908)—GLENN CURTISS WINS FIRST AMERICAN TROPHY

Official Photograph in Glenn H. Curtiss' Collection. We here witness the first Official Flight in America for a trophy, as Glenn H. Curtiss makes the first trial for the Scientific American Trophy. To win it he must publicly fly a straightaway kilometer, five-eighths of a mile. Many came from afar, including delegations from New York and Washington. It proved a rainy day, but late in the afternoon the skies cleared. The "June Bug" was wheeled from its tent. Its motor worked "beautifully." In the early evening Curtiss took off over the old race track and easily flew past the one kilometer flag and on for fully a mile, while the welkin rang about Lake Keuka.

GLENN CURTISS *Amazes* WORLD *with Great Achievement*—1908

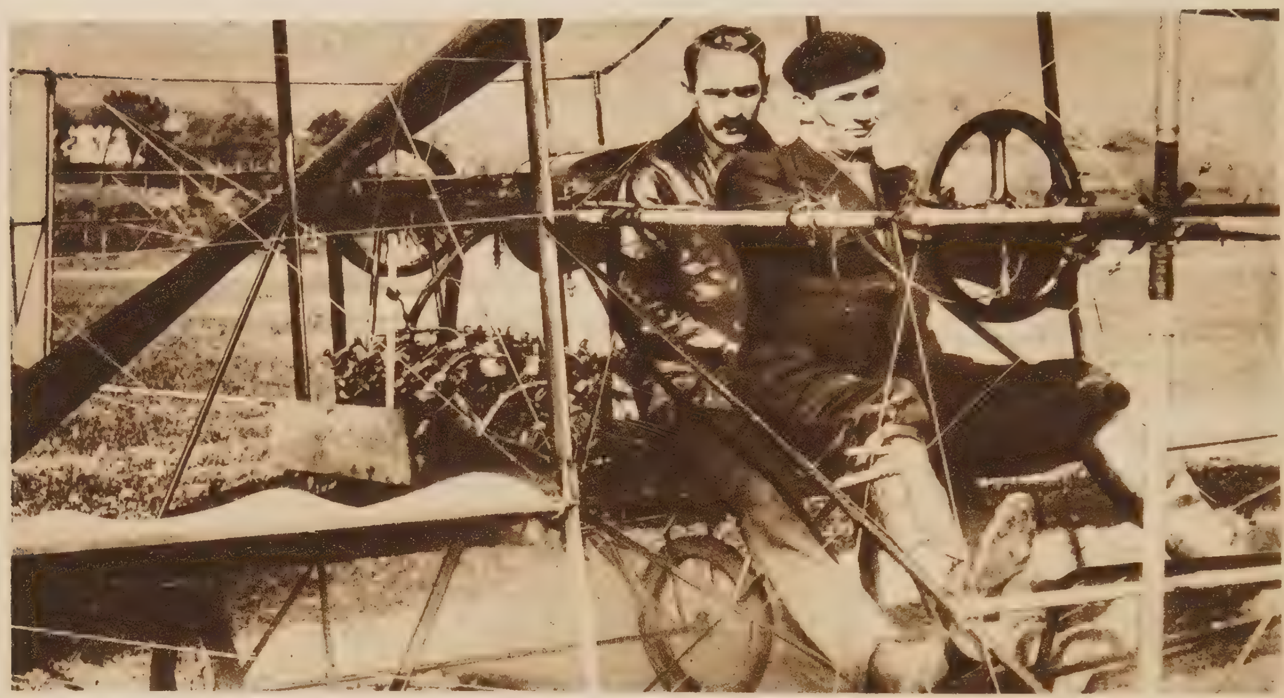


PIONEERS IN THE AIR

Augustus M. Herring (associate of Chanute in glider experiments): Baldwin, Curtiss, Charles M. Manly (who flew the Langley "aerodrome"), Selfridge, McCurdy, Alan R. Hawley (famous balloonist, then president of the Aero Club of America).

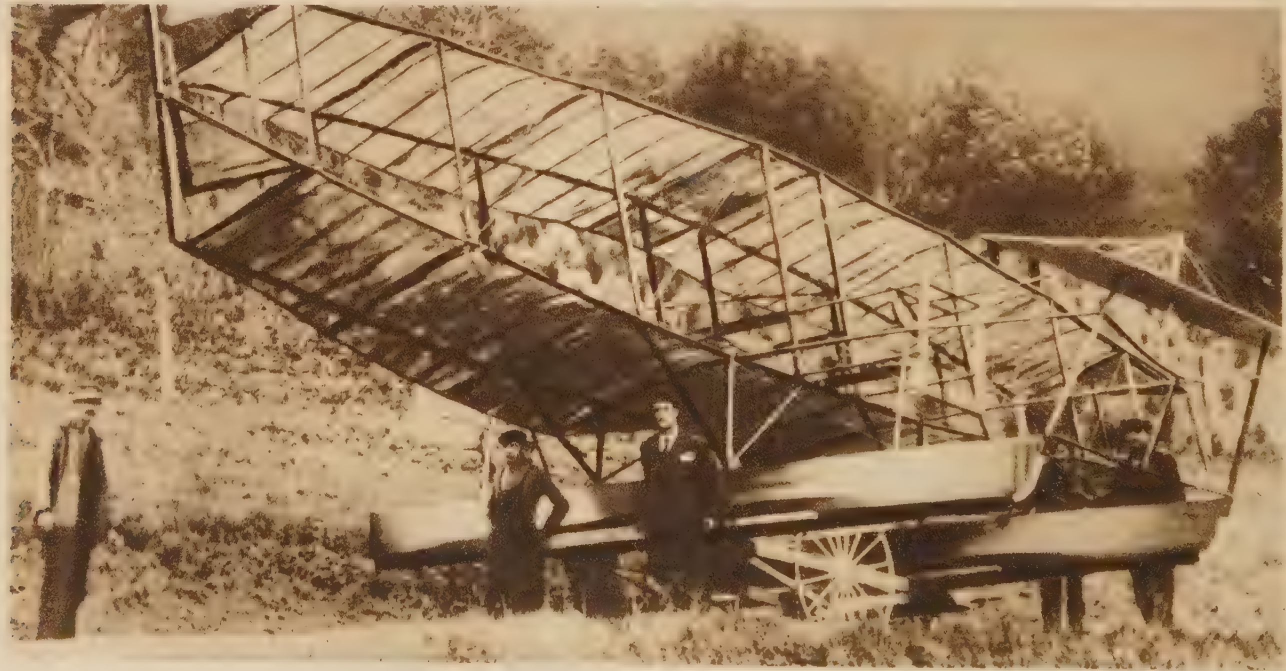
Many others prominent in American aeronautics, then and since, witnessed this first great public flight in America. Among them were Stanley Yale Beach, David Fairchild, Christopher J. Lake, George H. Guy, Ernest L. Jones, Wilbur R. Kimball and Captain Thomas S. Baldwin. Unfortunately Dr. Bell had gone to Baddeck, but the other members of the Experiment Association are pictured above. Photographs (above and right) in Selfridge collection.

GLENN CURTISS' "FLYING FACE" IN HIS FIRST TROPHY FLIGHT

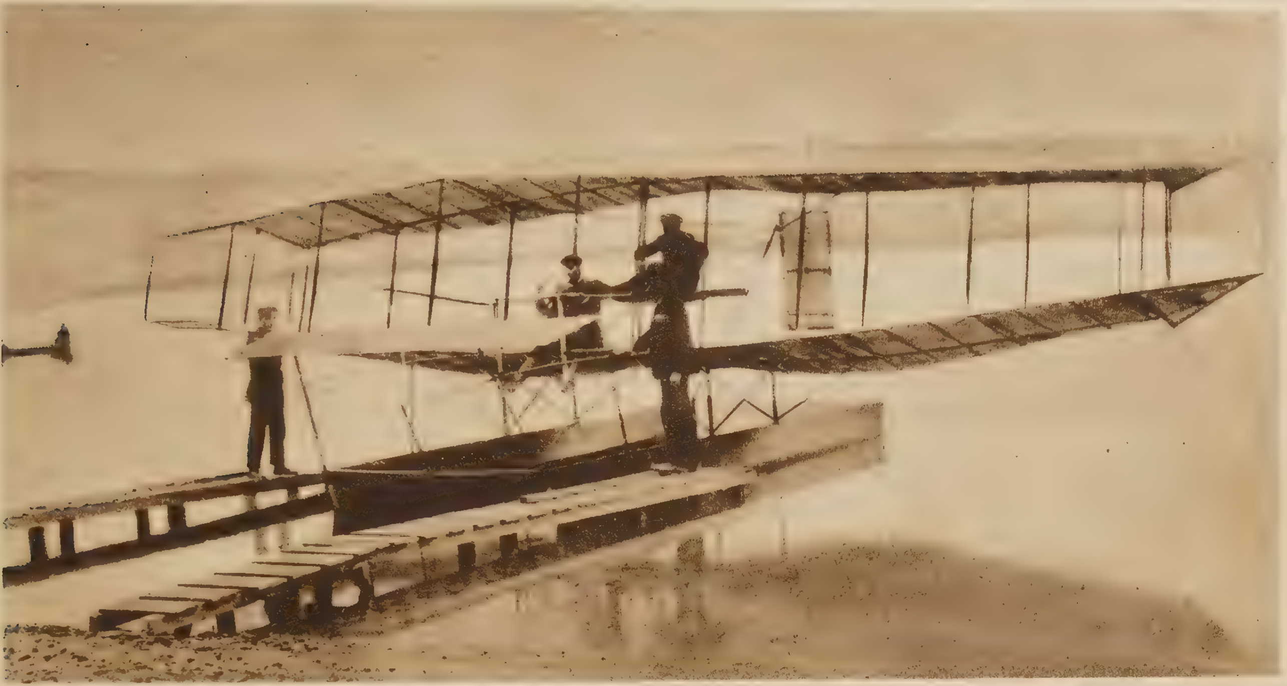


CURTISS AND McCURDY IN "SILVER DART" (above)—the last airplane produced by the Aerial Experiment Association at Hammondsport was the "Silver Dart" designed by J. A. D. McCurdy, young Canadian engineer who became one of America's first and best pilots. All the members worked on this, but the responsibility was McCurdy's. It was successfully flown (November 1908) by McCurdy and Baldwin. Then it was taken by them to Dr. Bell's place in Baddeck, Nova Scotia, and there flown over much of the surrounding country, with take-offs from the ice of the Bras D'Or lakes. McCurdy estimates that in some 200 flights in "Silver Dart" he flew more than 1,000 miles. Photograph in Collection of Morton B. Downs.

CURTISS' FIRST HYDRO-AEROPLANE—"JUNE BUG" WITH PONTOONS (Below)—Official Photograph, United States Army Air Corps—This peculiar looking contrivance is the "June Bug," in which we have seen Curtiss perform brilliantly, *with pontoons fastened to her underbody*—to form the *first hydro-aeroplane* ever constructed!

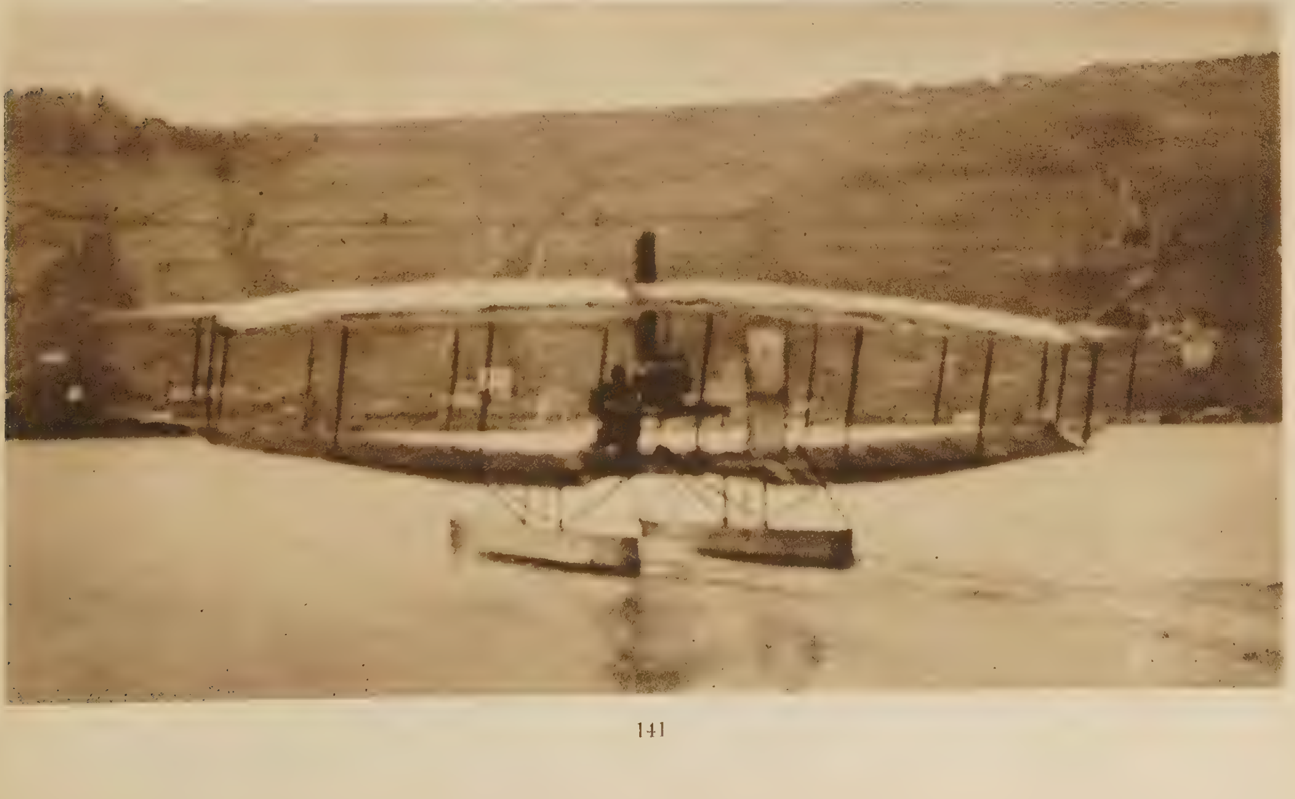


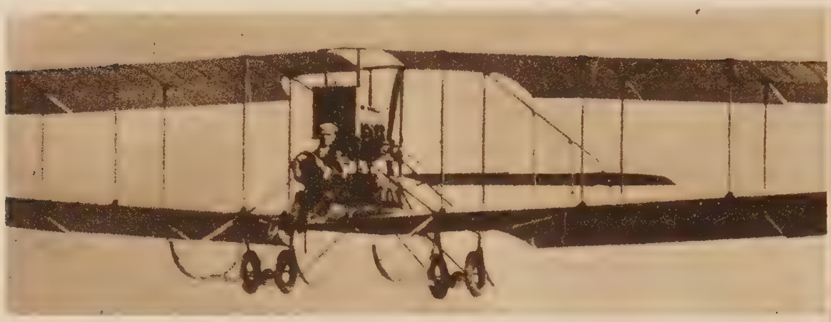
CURTISS INVENTS *the* WORLD'S *First* SEAPLANE—1908



McCURDY AT WHEEL OF CURTISS' "LOON" (above)—Photograph in Ernest L. Jones Collection—Glenn Curtiss and his associates at Hammondsport believed the "June Bug" would take off from the surface of Lake Keuka if supplied with pontoons. Renaming her "Loon" they tried this out (November 1908). Here began the sequence of events which made Curtiss the inventor of the hydro-airplane or seaplane.

THE "LOON" VAINLY ATTEMPTS TO FLY (below)—Rare Photograph in collection of Augustus Post. "We made many attempts to rise from the water in her," says Curtiss, "but owing to the great weight were unable to make any real flights, though observers on shore were positive that the pontoons sometimes cleared the water. We needed more power. Our best motor could only drive the 'Loon' 25 miles an hour on the water—not enough to get the machine into the air except in a strong head wind; and we were not anxious to try flying in a strong wind."



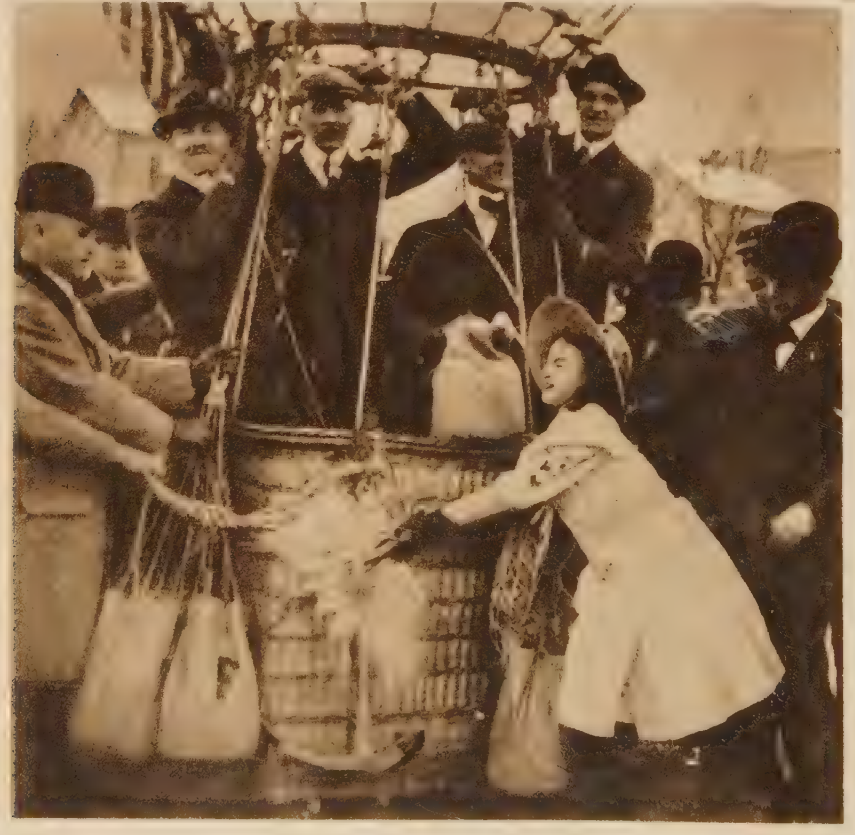


DR. WILLIAM WHITNEY CHRISTMAS, of Washington, D. C., (above and right), is recorded as the "Third Man in America to Make a Public Flight in an Airplane" (March 8, 1908), next after the Wright brothers, and four days before the first flight of the Curtiss "Red Wing," in a plane of his own design and construction at Fairfax City, Virginia.

This is said to have been the first American airplane equipped with ailerons for lateral control. It had no front elevator such as was at first used by the Wrights and Curtiss, and had but a single propeller. Dr. Christmas was finally to be recognized by the United States Government as the inventor of the aileron, his patent validated and purchased by the Government for use by all aircraft manufacturers during the World War. Amid conflicting claims this fact stands out.

Dr. Christmas had become interested in flying at an early age, lying out in the fields to watch the birds. He had corresponded with M. Eiffel in Paris, builder of the Eiffel Tower, and had built kites and then model planes and gliders. He built a tandem monoplane glider (1905) and gave a public exhibition with it at the Washington Monument, flying 500 feet.

Photographs of Dr. Christmas in his plane (above) and of the inventor (right) are in the personal collection of Dr. Christmas.



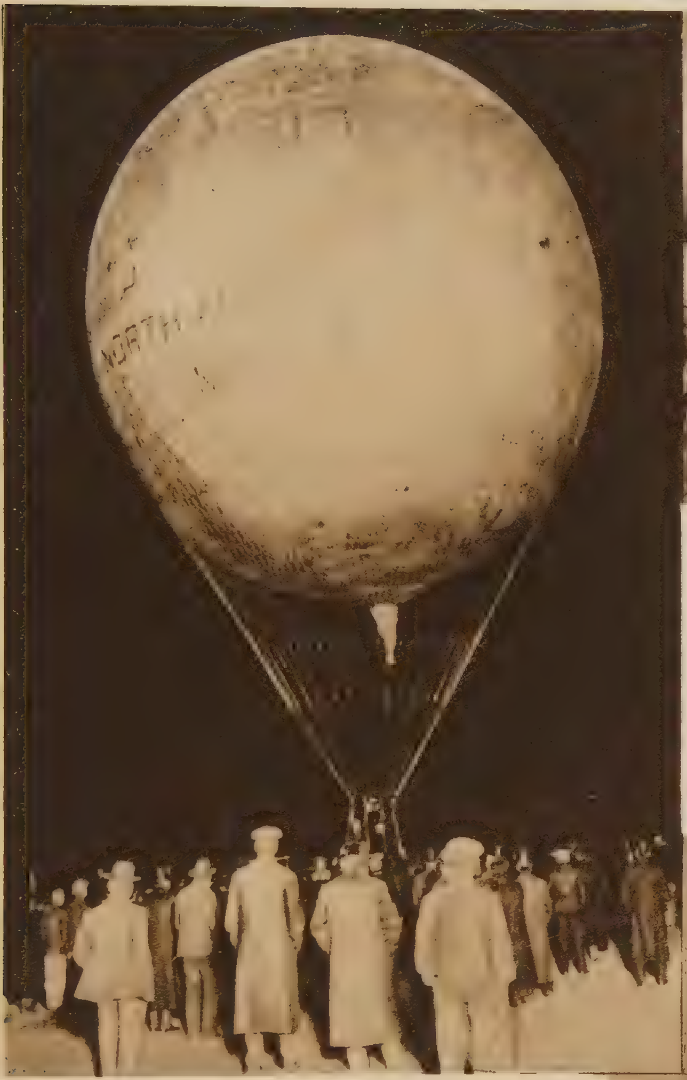
FORBES' HISTORIC BALLOON FLIGHTS

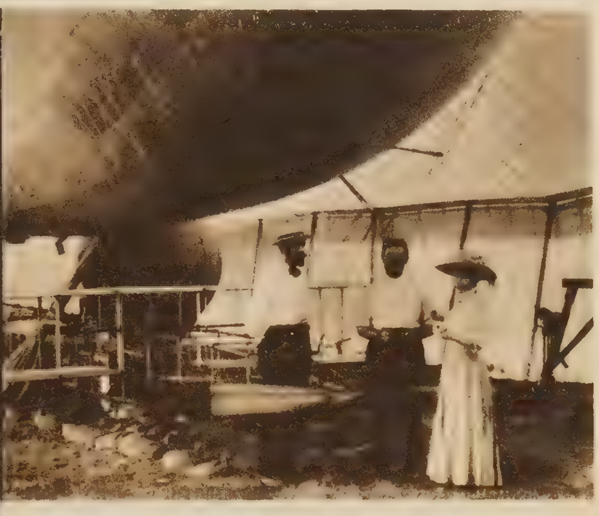
BALLOONING in America continued as the airplane was developed. We here see Natalie Forbes, daughter of A. Holland Forbes, christening her father's great balloon "Conqueror" at North Adams, Massachusetts (May 5, 1908). It is not easy to see what liquid is splashing over the balloon basket, but rest assured it is champagne.

The "Conqueror" began her maiden aerial voyage immediately afterward, landing in a New York suburb. Ballooning had become very much a fashionable sport and numerous well-known New Yorkers engaged in it.

In the balloon basket (above), left to right, we find William F. Whitehouse and A. Holland Forbes of New York, and N. H. Arnold and Leo Stevens of North Adams. The last named was the builder of the balloon. Historic photograph in the Ernest L. Jones Collection.

AIRSHIPS *Enter* RIVALRY *for* MASTERY *of* CLOUDS—1908



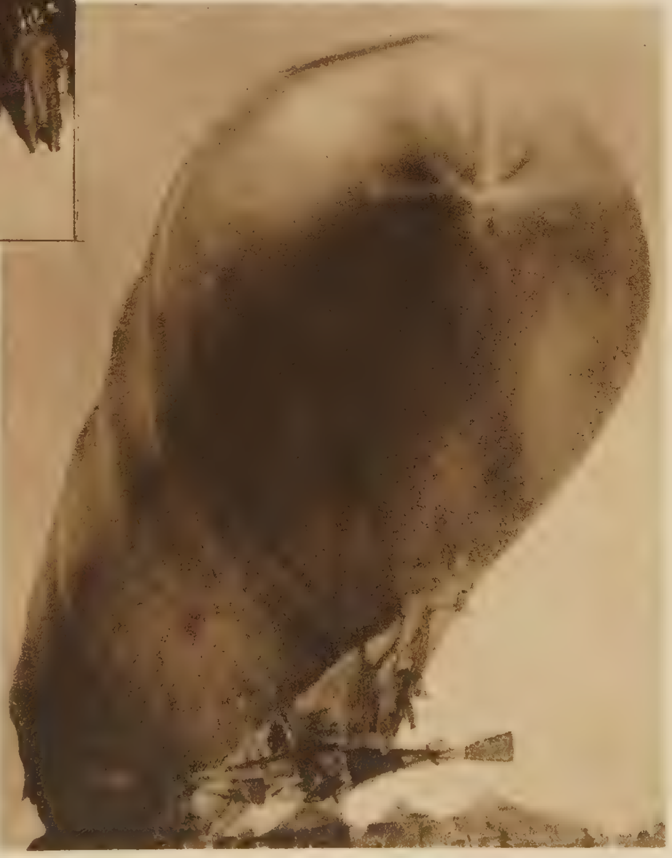


AMERICA'S FIRST AIRSHIP BUILDER (Above)—Captain Thomas S. Baldwin (center), Augustus Post (left) and Mrs. Baldwin are here shown standing near one of the famous Baldwin dirigible airships. Official photograph, United States Army Air Corps.

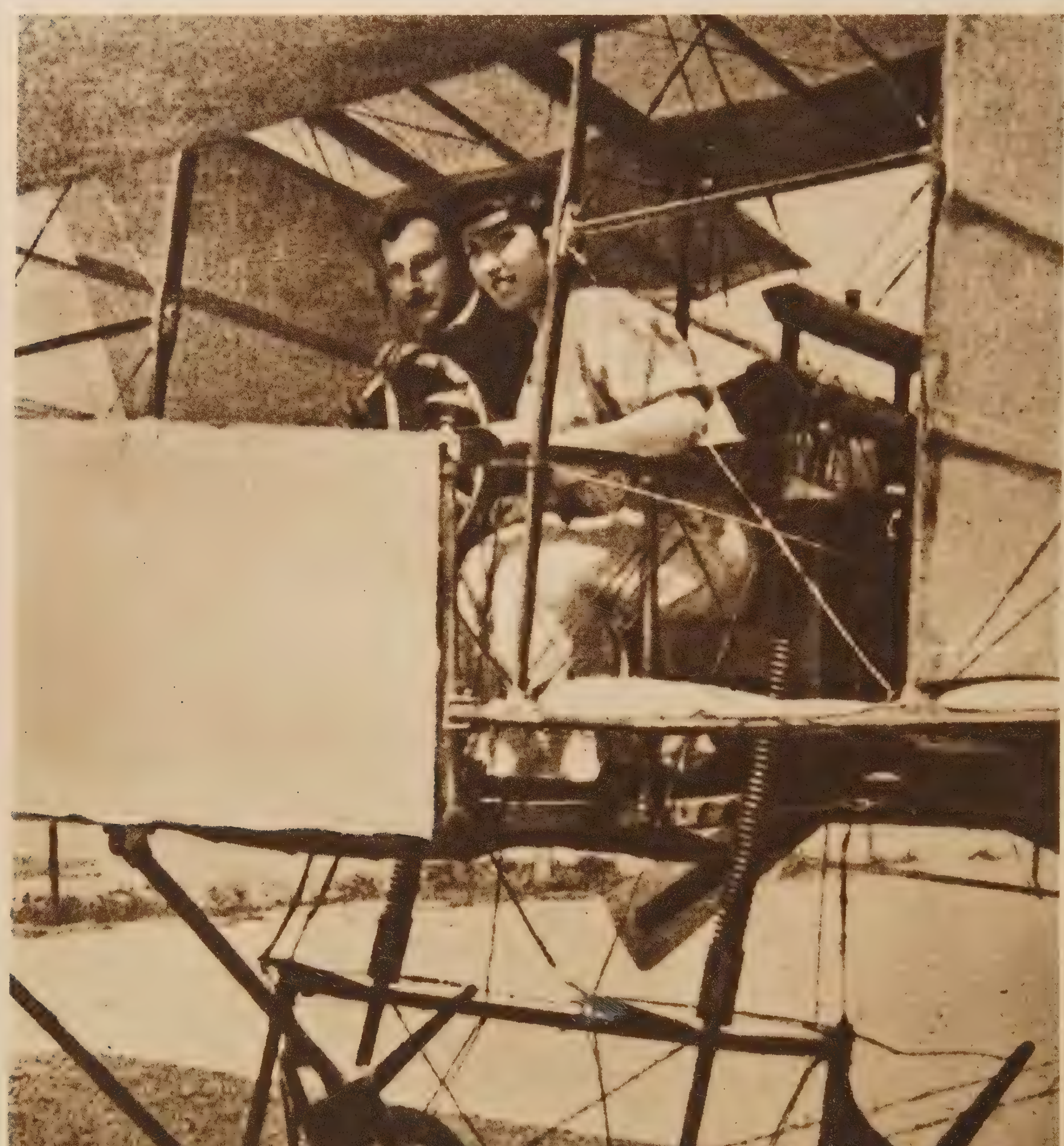
(Photograph left)—A. Holland Forbes of New York, and N. H. Arnold of North Adams, Massachusetts, are shown making a balloon ascension from North Adams at 3 o'clock in the morning (October, 1908) in the balloon "North Adams."

AMERICA'S FIRST AIRSHIP DISASTER (Right)—The huge, ill-fated Morrell airship, 450 feet long, exploded and collapsed soon soon after she had begun her initial air voyage at Berkeley, California (May 23, 1908). Fifteen people were aboard, including her inventor, J. A. Morrell of San Francisco, and all were seriously injured. The immense airship, by far the largest yet attempted, with six motors, had just ascended from San Francisco before a throng of many thousands of people and was not over 300 feet in the air when the end came.

She rose slowly over the city and her great length seemed slightly buckled as she started, but her inventor steered the great ship over San Francisco Bay and was proceeding westward gradually gaining altitude, when suddenly the huge affair began to fold up in the middle. The explosion echoed from the hills about San Francisco. The mighty envelope took fire at one end and began to collapse. It fell slowly to earth. Her badly injured passengers were hurried away to hospitals. Photograph, made just as the Morrell Airship began to rise, is in the Brown Brothers Collection.



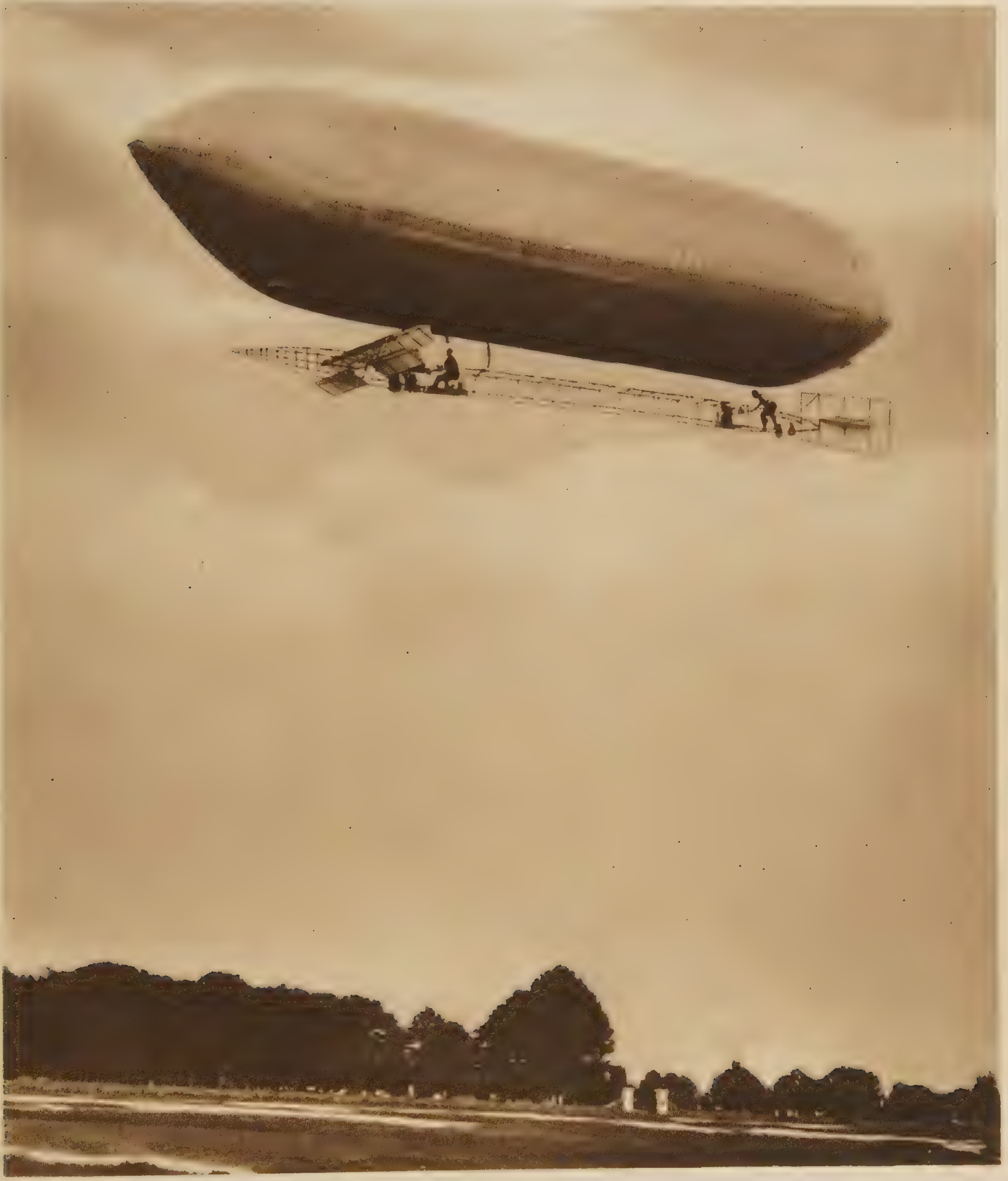
FIRST WOMAN *in* WORLD *to Make* AIRPLANE *Flight*—1908



MADAME THERESE PELTIER, a French sculptress, was the "First Woman in the World to Make an Airplane Flight." She was a friend of Leon Delagrange, French sculptor, who became noted among the first French airmen, and chanced to be at Turin, Italy, when he was there with his airplane (July 8, 1908).

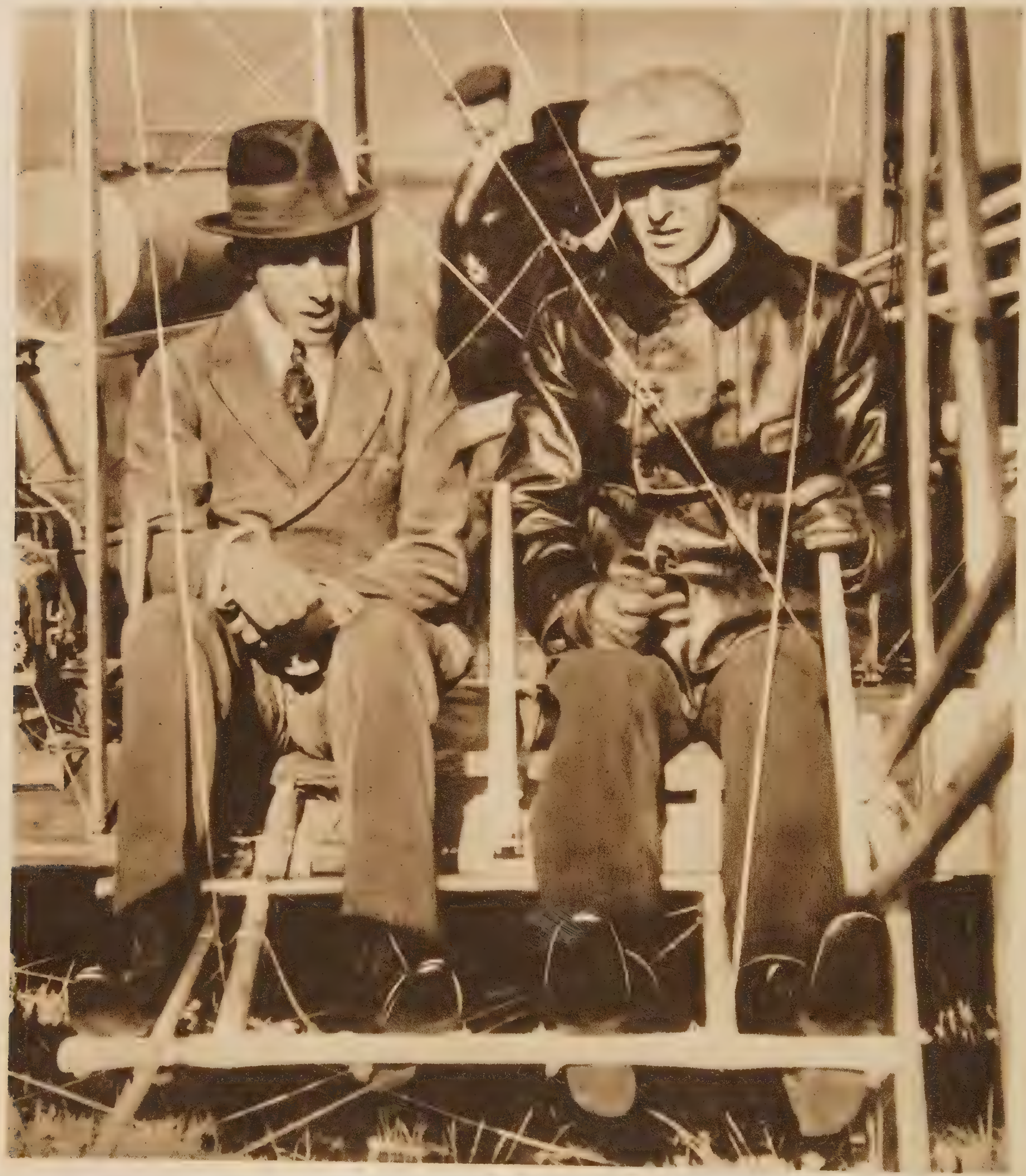
Madame Peltier declared her ambition to be the first woman to go up in an airplane. Delagrange, feeling that his ship would be honored in this, took her aboard. They rose some 12 feet from the ground, flying a distance of about 650 feet. On the ground Delagrange allowed his fair guest to hold the steering wheel (as note above), but in the air he handled the airplane himself.

First GOVERNMENT AIRSHIP *in the* UNITED STATES—1908



UNCLE SAM'S FIRST AIRSHIP was purchased from Captain Thomas Scott Baldwin of California by the United States Army (August 18, 1908) and named "Signal Corps I." The price paid was $10,000, the amount offered by the Government for a "practicable military means of dirigible aerial navigation." This purchase took place immediately following the airship's successful test flight at Fort Myer, Virginia, when the ship was flown by Capt. Baldwin over a straightaway course at from 20 to 30 miles an hour. She was 96 feet long and was driven by a Curtiss 20-horse power engine. In the official photograph from the records of the U. S. Army Air Corps, Baldwin is seen astern and Glenn Curtiss forward at the engine, which was of his manufacture.

MONARCHS *of* EUROPE *Greet* AMERICAN GENIUS—1908



KING ALPHONSO WITH WILBUR WRIGHT—Official Photograph in Government Archives of Spain and France. The Spanish King greeted the American inventor enthusiastically on his arrival in France (August, 1908). Wilbur Wright went to Europe with one of their latest model airplanes—to fly in France, where a French syndicate was to take over their patent rights. For three years past (since 1905), the Wrights have not been active in the air, but have greatly improved their machine. It now has increased engine-power and carries two passengers sitting upright.

PART IX

WORLD'S FIRST AMBASSADORS *of the* AIR

WILBUR WRIGHT *Demonstrates the* GREAT INVENTION *in* EUROPE

THE GREAT YEAR (1908) finds the Wrights again in the forefront "astonishing the world by phenomenal flights, breaking world records." France and the United States are bidding for the services of the great inventors.

We find Wilbur Wright in France (1907) negotiating with the French Government and selling patent rights to a syndicate in France, while Orville Wright is engaged on the "contract" for the "First Airplane to be Purchased by the Government of the United States."

Wilbur Wright makes his First Official Flight on the plain of Auvours, ten miles from Le Mans, in France (August 8, 1908), creating intense interest throughout Europe which leads to honors conferred by many monarchs and countries. The "First American Ambassador of the Air" is achieving victory on the Eastern Hemisphere; while on this same day Farman, the "First International Aviator from Europe" is meeting adverse conditions in America.

Wenham, "the last of the great pioneers in aeronautical science in the preceding century," dies in England (August 11, 1908), three days after Wilbur Wright's first flight in Europe. Wenham patented the first biplane glider in the world (1866), followed by a scientific treatise which, according to English authorities, "could have constructed a dynamic flying machine capable of flight . . . had he not lacked a prime mover." The patriarch lived to witness the realization of his principles.

Wilbur Wright raises the world's record near Le Mans (September 21, 1908) by flying a distance of over 52 miles, remaining in the air 1 hour, 31 minutes, 25 seconds. His "endurance, altitude, and perfect control amazed and delighted Europe." He performs the "great feat of carrying a passenger (September 16, 1908) and his first woman passenger (October 7, 1908)."

He closes this "triumphant year" by flying 77 miles in 2 hours 20 minutes and 23 seconds—again breaking world records for distance and duration—and winning the Michelin Trophy of 20,000 francs, to be followed by greater conquests at Pau and Rome.

We shall see him as he is hailed "hero of the day" in Europe. World celebrities greet him—King Alphonso of Spain, Queen Margherita of Italy, Sir Arthur Balfour of England, as he begins his "Tour of Triumph" to Italy and England.

France, in the meantime, is coming into line with its own aviators (1908): Captain Ferber — Zens — Legagneux — Welferinger — Gasnier — Gabriel Voisin — Colliex.

Germany, the "Birthplace of the Airship," enters the heavier-than-air flights with Grade in his triplane at Magdebourg—England with Cody—France continues its record with Calderara, an Italian—Zipfel, who later makes flights at Berlin—Moore-Brabazon at Issy, who later wins the *Daily Mail* $5,000 Prize in England—Chateau and Vaniman.

Kaiser Wilhelm decorates Count Zeppelin in recognition of his achievements with his Airships and proclaims him the "Greatest German of the Century" (1908).

FIRST FLIGHT *of* WILBUR WRIGHT *in* FRANCE—1908

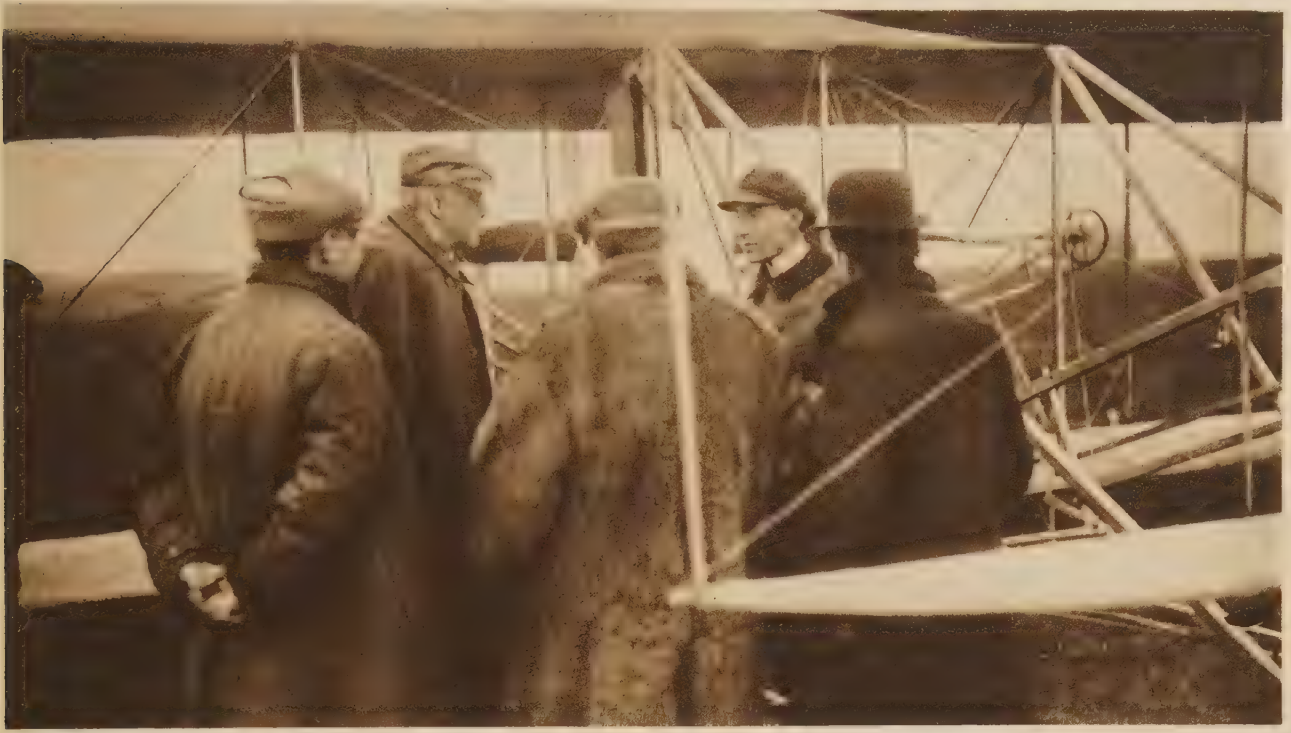
WILBUR WRIGHT BREAKS WORLD'S FLYING RECORDS AT LE MANS

THE FIRST FLIGHT of Wilbur Wright in France (August 8, 1908), and others that followed immediately, were short and conservative, as befitted a motor not yet fully adjusted. By mid-September all was going smoothly at Le Mans and he remained longer and longer in air.

Wilbur Wright broke the world's flying records for duration and distance by a triumphal flight (September 21, 1908) of 56 miles in 1 hour, 31 minutes, 25 4/5 seconds. Shortly before this he had broken another record by zooming up to the then unprecedented altitude of 380 feet. Wilbur is shown (below) in an autographed photograph in the Collection of Augustus Post.

Yours truly
Wilbur Wright

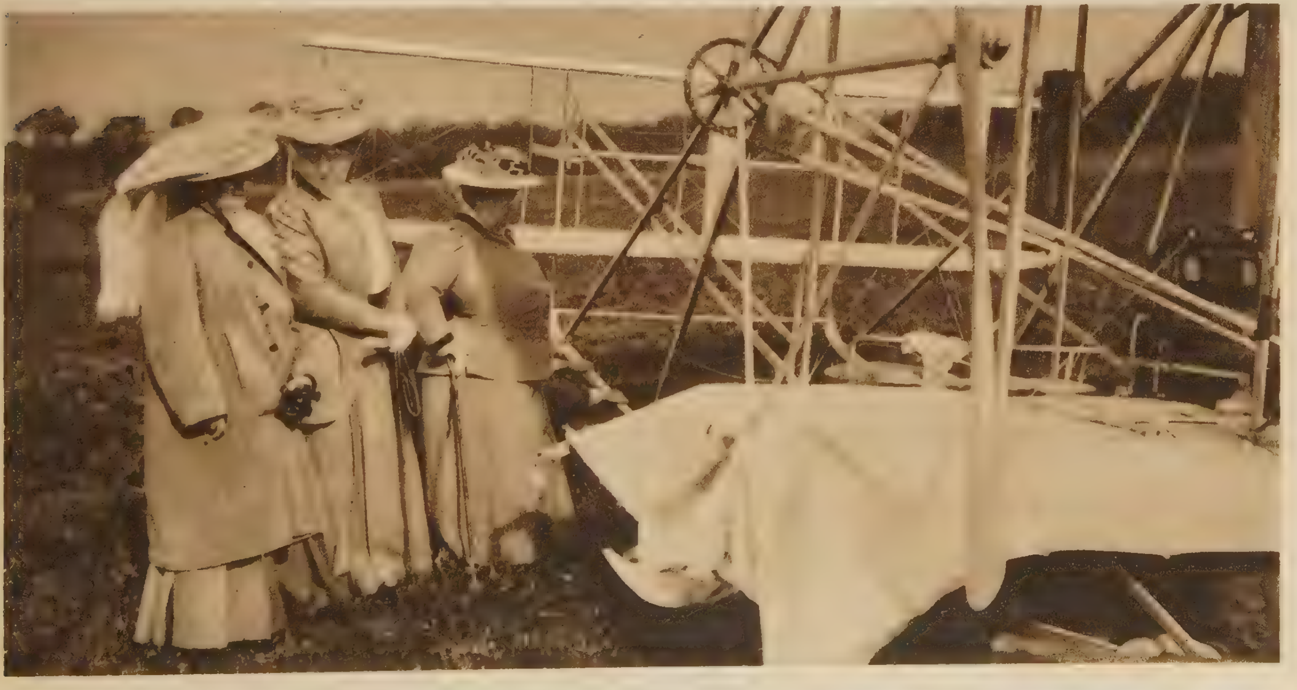
World CELEBRITIES *Gather About* WRIGHT *in* EUROPE—1908



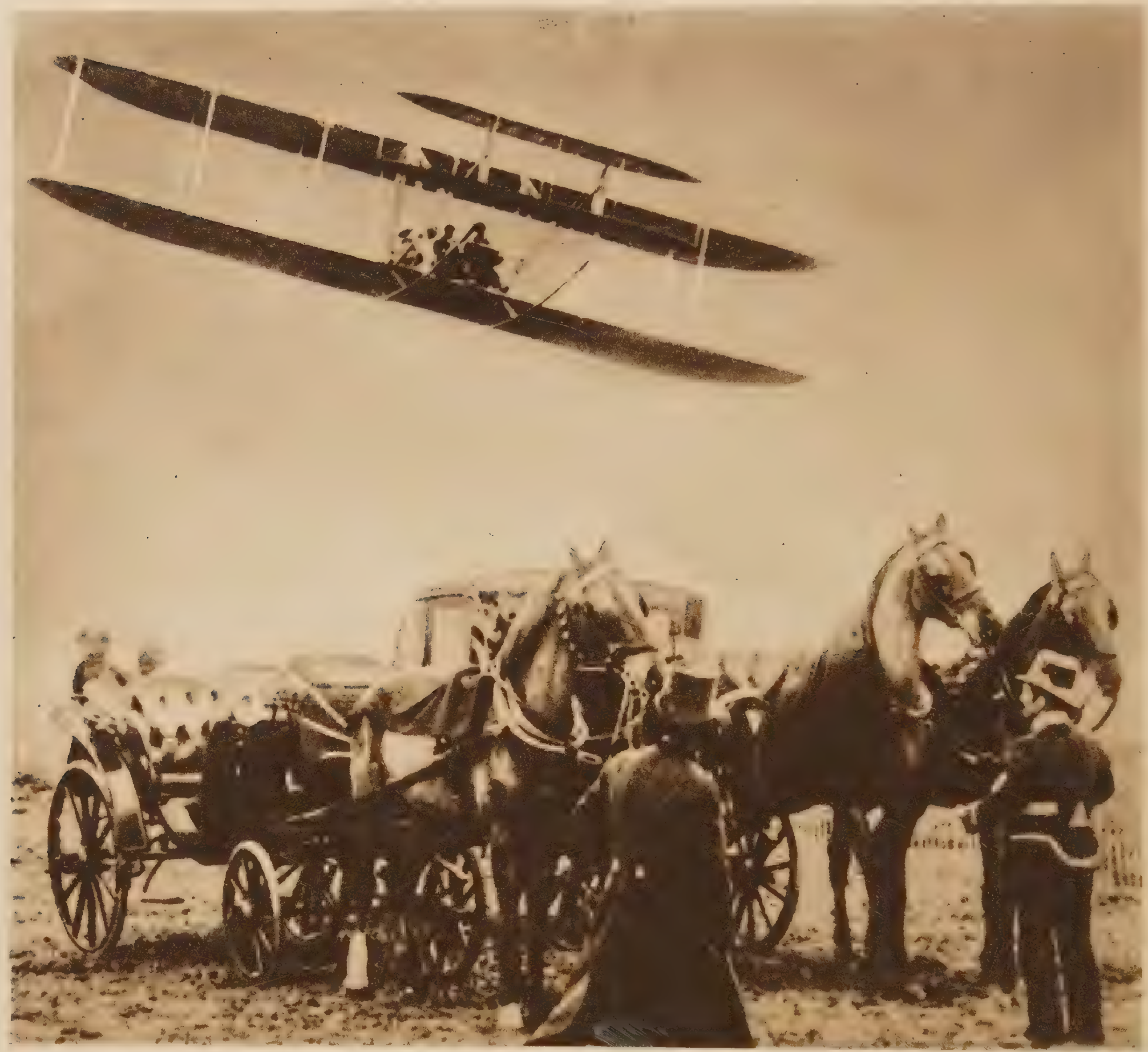
SIR ARTHUR BALFOUR, BRITISH STATESMAN, PAYS HOMAGE TO AMERICAN FLIER

DISTINGUISHED VISITORS flocked to Wilbur Wright's flying camp on the plain of Auvours, near Le Mans, France. The American was demonstrating the Wright machine for the French syndicate now about to close its option on the French patent rights for $100,000. Sir Arthur Balfour (above), great British statesman, crossed the Channel especially to observe the overseas airman at close range.

American sojourners in Paris also came down to Le Mans. The trio of distinguished ladies (below), examining the Wright plane after a slight mishap to its wing fabric, are Misses Elsie De Wolfe, Anne Morgan and Elizabeth Marbury,—three world-famous American women. Both photographs in Brown Brothers Collection.



WILBUR WRIGHT *Flying Before* GOVERNMENT *of* FRANCE



VISITING ROYALTY THRILLED BY WILBUR WRIGHT'S FEATS IN THE AIR
Photograph in the Paul Tissandier Collection in Paris

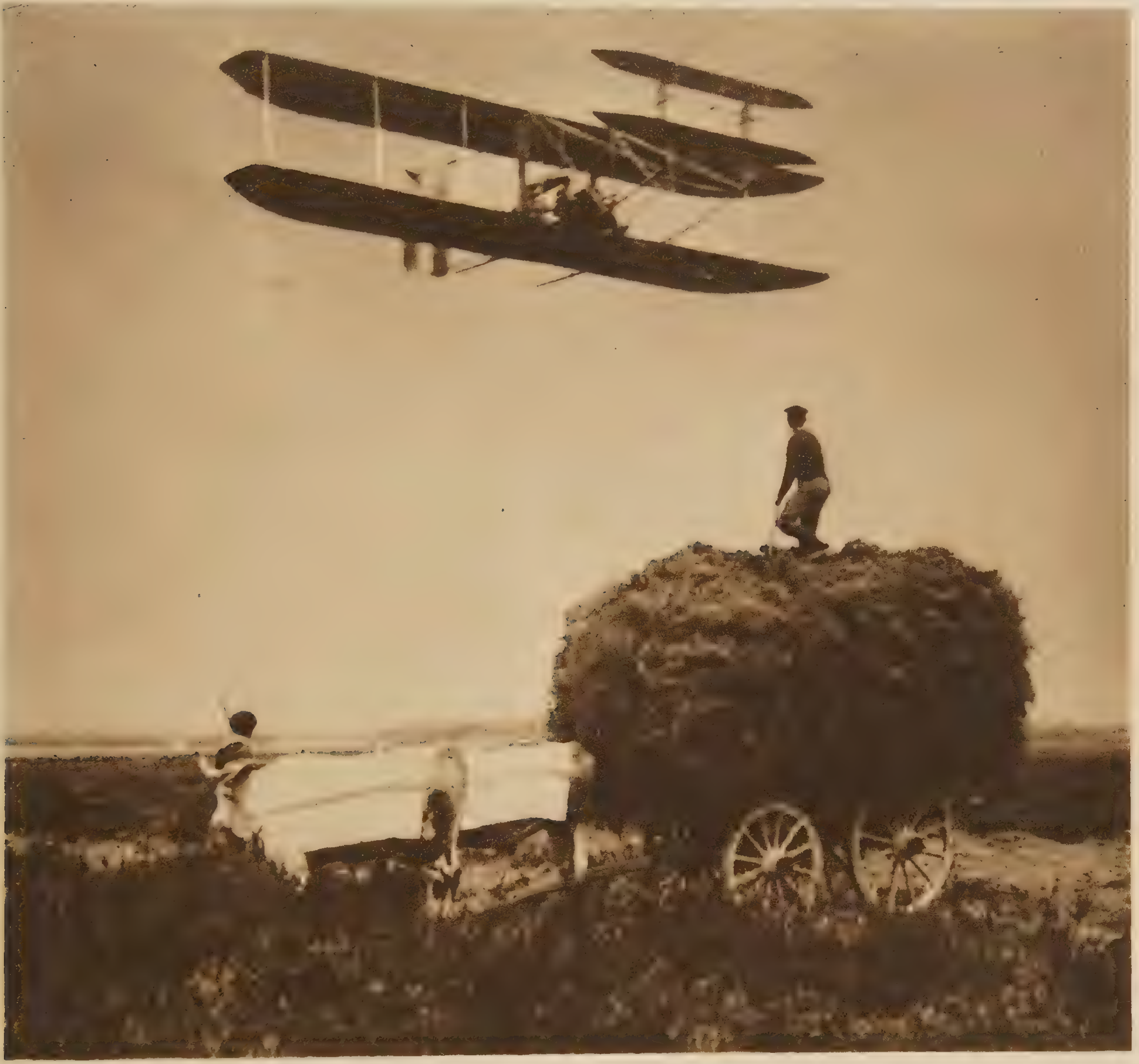
WILBUR WRIGHT now first carried a passenger aloft into the Gallic atmosphere—a historic day in French aviation (September 16, 1908). Ernest Zens was the passenger, a balloonist and aeronautical engineer well known in France.

The flying field near Wright's camp at Le Mans was thronged with visitors that afternoon. Queen Margherita of Italy, who had missed a flight on her first visit came again this day and remained standing on the field for three hours; fascinated by the marvelous air vehicle in which the American genius rode the wind.

The heart of the sober-faced Ohioan went out to these warm-hearted French and Italian people who were so much more ready to accept him and his achievements than had been his own people at home in America.

Royalty was out in force—not only at the Le Mans field but at Pau in the early months of 1909—French, British, German, Spanish, Austrian, Italian—Kings, Queens and princes, with European statesmen, military officers, scientists, members of parliamentary bodies in different countries and the representatives of European newspapers and periodicals. Many left their carriages in order to gain a point of vantage where they could see the airman at closer range and better watch his aerial evolutions.

In the photograph above, Paul Tissandier is the passenger, flying with Wilbur Wright over the heads of Royalty at Pau. He was one of Wilbur's first pupils in France—the son of one of the famous Tissandier brothers who were prominent figures in French aeronautics forty years before. Photograph in the Paul Tissandier Collection.



FRENCH PEASANTS IN STARTLED WONDER AS MAN-MADE BIRD SWEEPS OVERHEAD

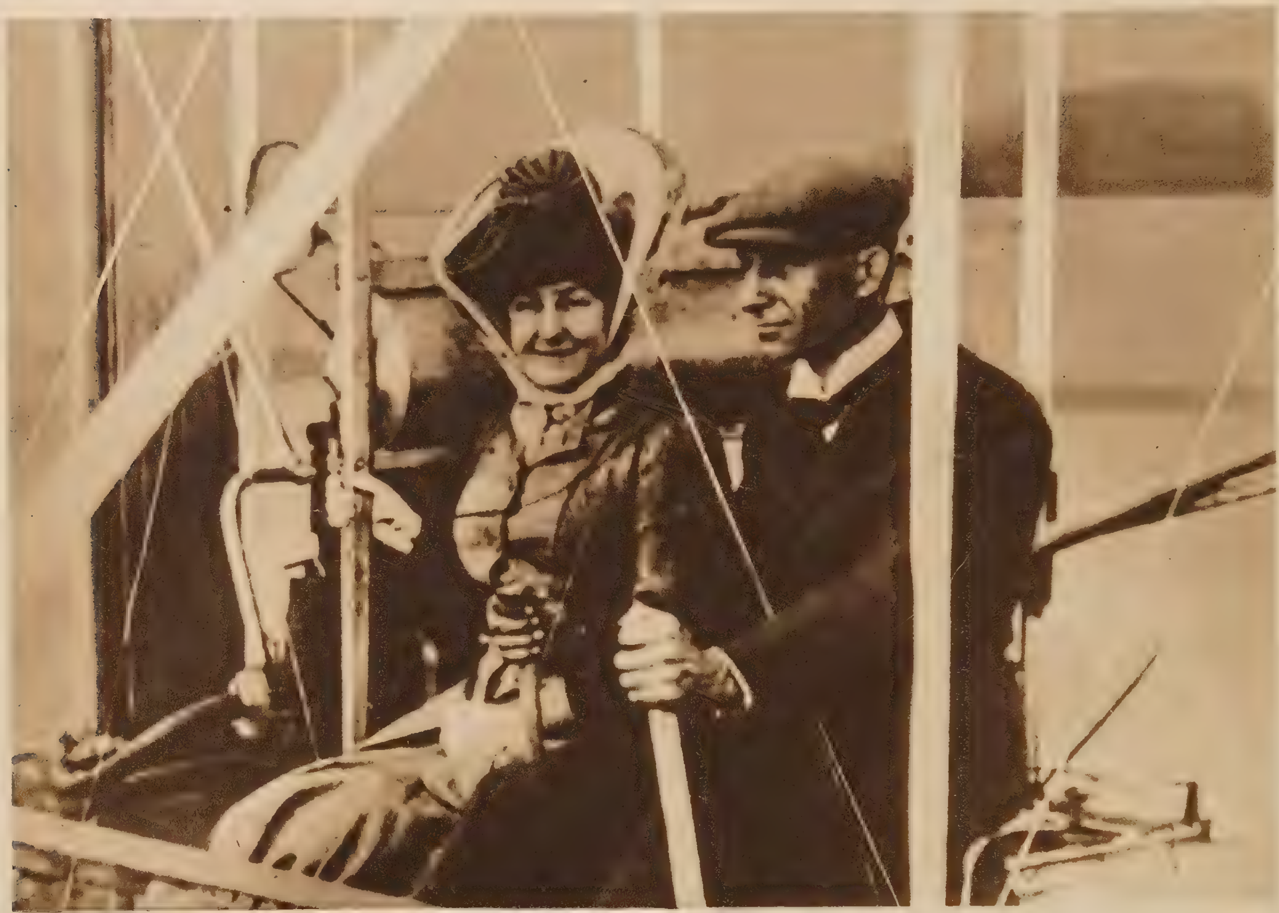
WILBUR WRIGHT created a sensation in France. Patrician and peasant alike were amazed as they saw man at last defy the law of gravity and soar at will through the air above them!

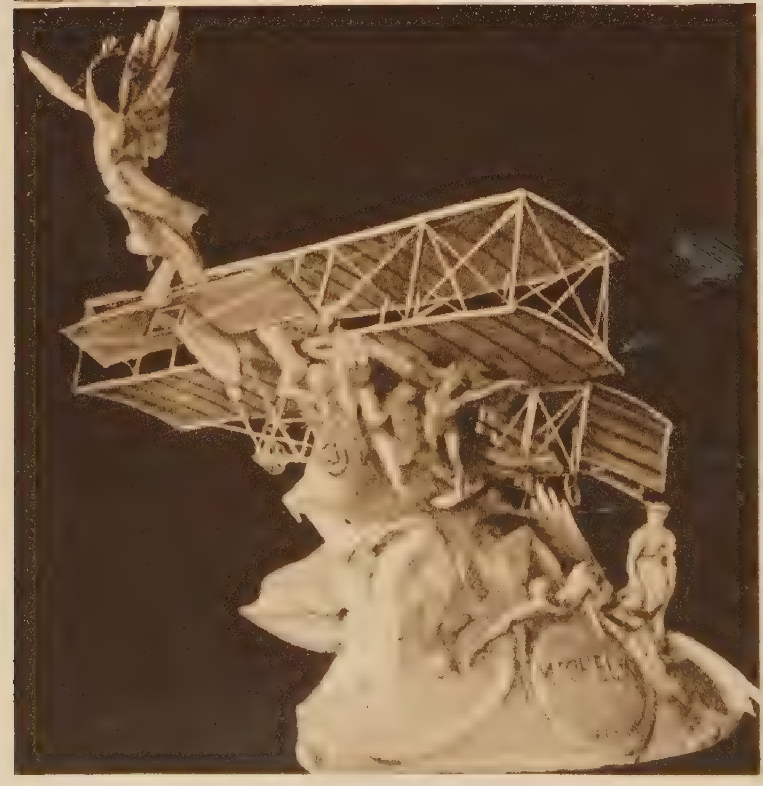
French peasants in the field, gathering hay by means of a primitive mode of transportation, paused in breathless amazement as the latest expression of American inventive genius hurtled through the air above their heads.

Again we see Wilbur Wright flying with a passenger (October 10, 1908), this time with Paul Painleve, who later was Premier of France. They remain in the air for 1 hour, 9 minutes and 45 seconds. Roaring over the flying field by his camp and sweeping over the nearby fields in wide, swooping circles, Wright proves his perfect control of the aerial craft which he "sells" to France and to Europe.

Wilbur Wright was the world's first International "Flier"—a pioneer in the skies. Before leaving America for France he and Orville had tried out their improved flier at Dayton; they had pushed its speed up to 44 miles an hour and had found its engine to run smoothly and all controls to be adequate. Wilbur, in the air, pushed a lever too far and brought the plane down with such force as to disable it beyond immediate repair. Therefore this was left behind in favor of a new Wright biplane.

First WOMAN *Passenger to* FLY *with Wilbur* WRIGHT—1908





THE AMERICAN AVIATOR is seen here as he is about to leave the ground at Le Mans, France, with Mrs. Hart O. Berg, his first feminine passenger (October 7, 1908). Mrs. Berg is now Mrs. Ogilvy-Druce of Paris. Mr. Berg was Paris representative of the Americans who were interested in Wilbur Wright's demonstrations in France.

Mrs. Berg had watched Wilbur Wright's evolutions at Le Mans. Finally he agreed to take her into the air. Mrs. Berg sprang into the passenger's seat and called for a cord to make her long skirt fast about her ankles. They rose 30 feet and flew for two minutes and a half. (Photograph in Acme Collection.)

The coveted Michelin Trophy, "The Triumph of Aviation" (left), and its accompanying prize of 20,000 francs were awarded Wilbur Wright when (December 31, 1908) he ended this eventful year over French soil with a flight of 77 miles in 2 hours, 20 minutes, 23 seconds, which far exceeded the world's record that he had set in September.

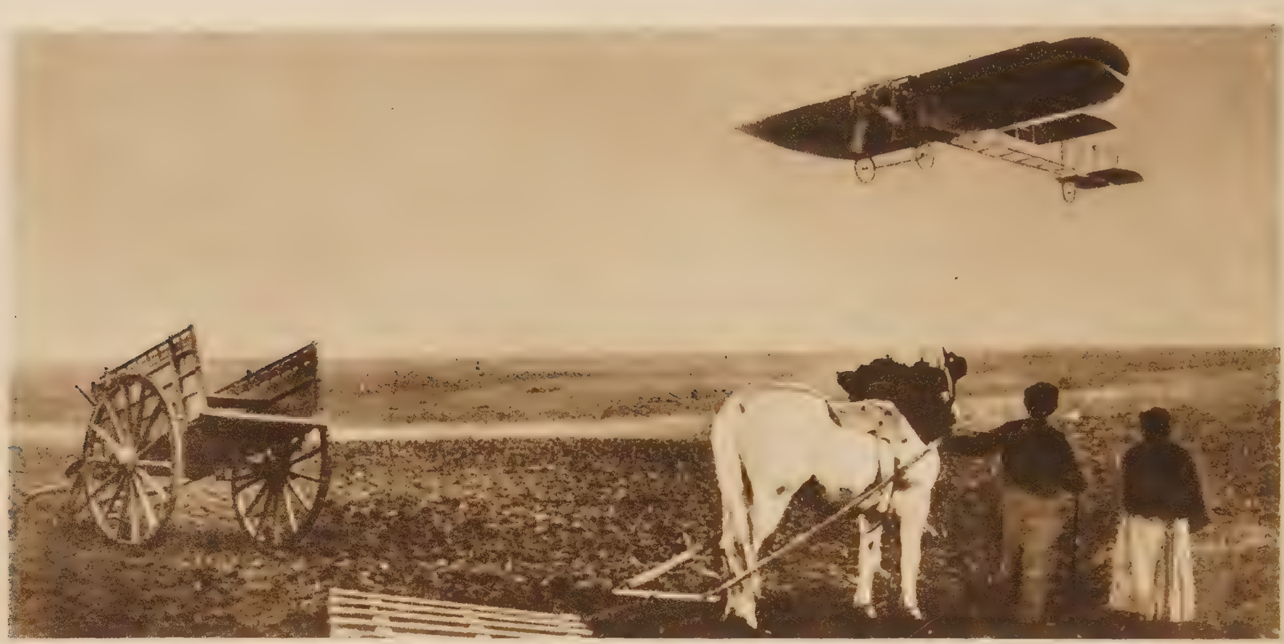
First TOWN-*to*-TOWN *Airplane* FLIGHT *in* WORLD—1908

HENRI FARMAN FLYING FROM CHALON TO RHEIMS IN TWENTY MINUTES

FARMAN AND DELAGRANGE were names to conjure with in French aviation. Farman during this year (1908) flew forty times as far in October as he had flown in January to win the 50,000-franc Grand Prize. He flew 25 miles in 44.5 minutes (October 2). The photograph (above) is of his flight from Chalons to Rheims, 27 kilometers, in 20 minutes—the first town-to-town airplane flight the world has ever known. Ernest L. Jones Collection.

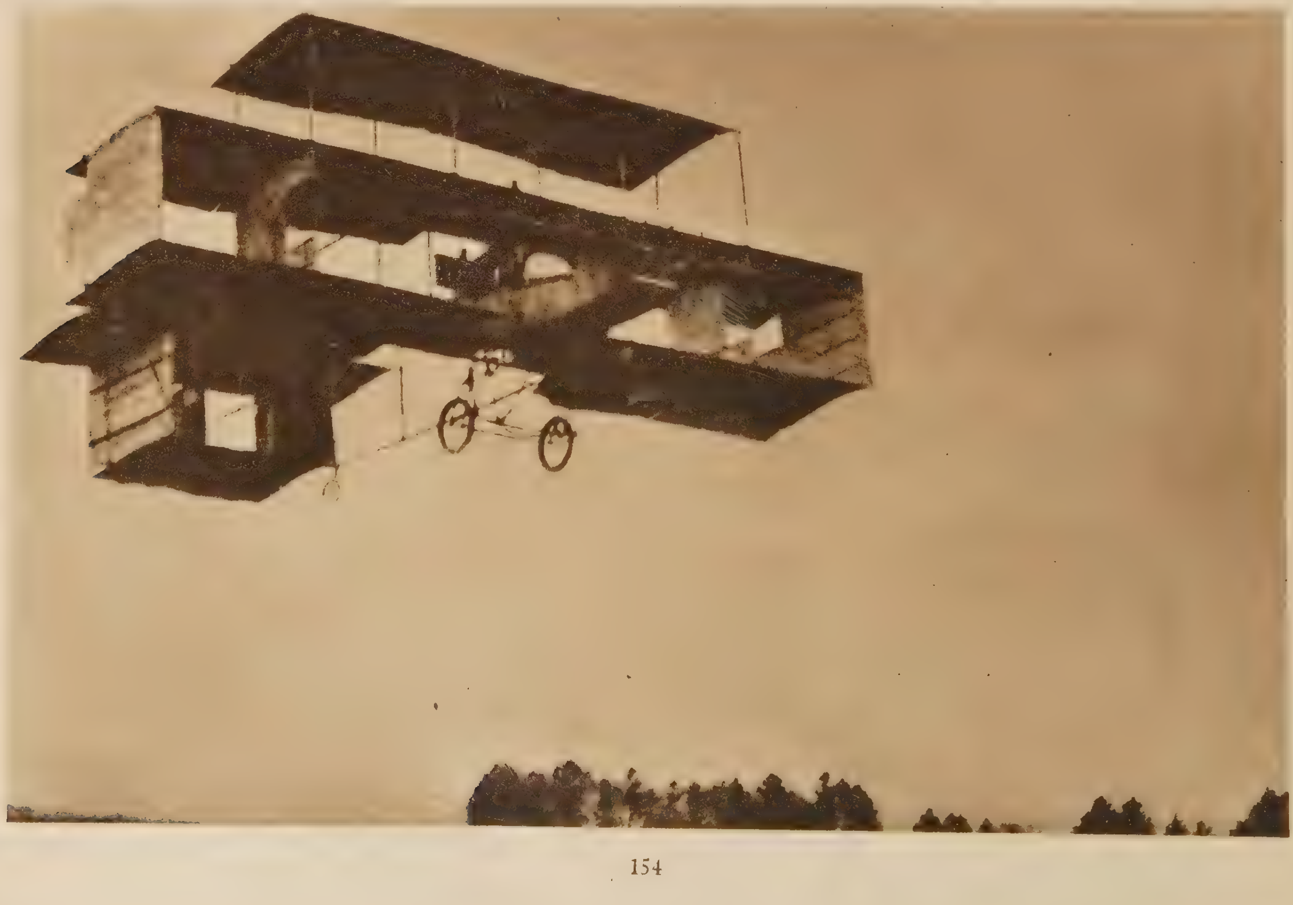
Meantime, Delagrange raised the world's flying records for duration in the air and distance four times in five months and in September remained in the air five times as long as he had been able to do five months before.

DELAGRANGE RAISES WORLD'S FLYING RECORD FOUR TIMES IN FIVE MONTHS



LOUIS BLERIOT MAKES WORLD'S FIRST CROSS-COUNTRY AIRPLANE FLIGHT (Above)—Toury to Artenay (France) and return, 18 miles in closed circuit, with three landings, (October 31, 1908). Bleriot was the pioneer and champion of the monoplane. An accomplished engineer and inventor, he first built a bird-like, flapping wing flying machine, but soon abandoned this in favor of the monoplane (1904). In his hands this became and remained a strong rival of the biplane. Photographic record of the famous flight in Ernest L. Jones Collection.

AN EXTRA PLANE MAKES THE VOISIN BIPLANE A TRIPLANE (Below)—The Voisin brothers were the first designers and builders of airplanes to come to the front in France. They built gliders for Bleriot and Farman which were successfully flown several years before the airplane appeared in France.



GERMANY'S *First* MILITARY AIRSHIP *Meets* DISASTER—1908

GERMAN GOVERNMENT'S FIRST ZEPPELIN OVER THE BODENSEE (Above)
Rare photograph in German Archives and in the Paul Thompson Collection

COUNT ZEPPELIN lost his largest airship, "Zeppelin IV," as the German Government was about to take her over to be renamed "Zeppelin I," as Germany's first military airship (August 5, 1908). On her final 4-hour test she had sailed the 70 miles from Friedrichshaven to Mayence, turned about and reached Stuttgart, 95 miles nearer home, when compelled to come down because of engine trouble. Anchored in the open, a pursuing gale tore her from her moorings and, high in the air, she burst into flames and was destroyed.

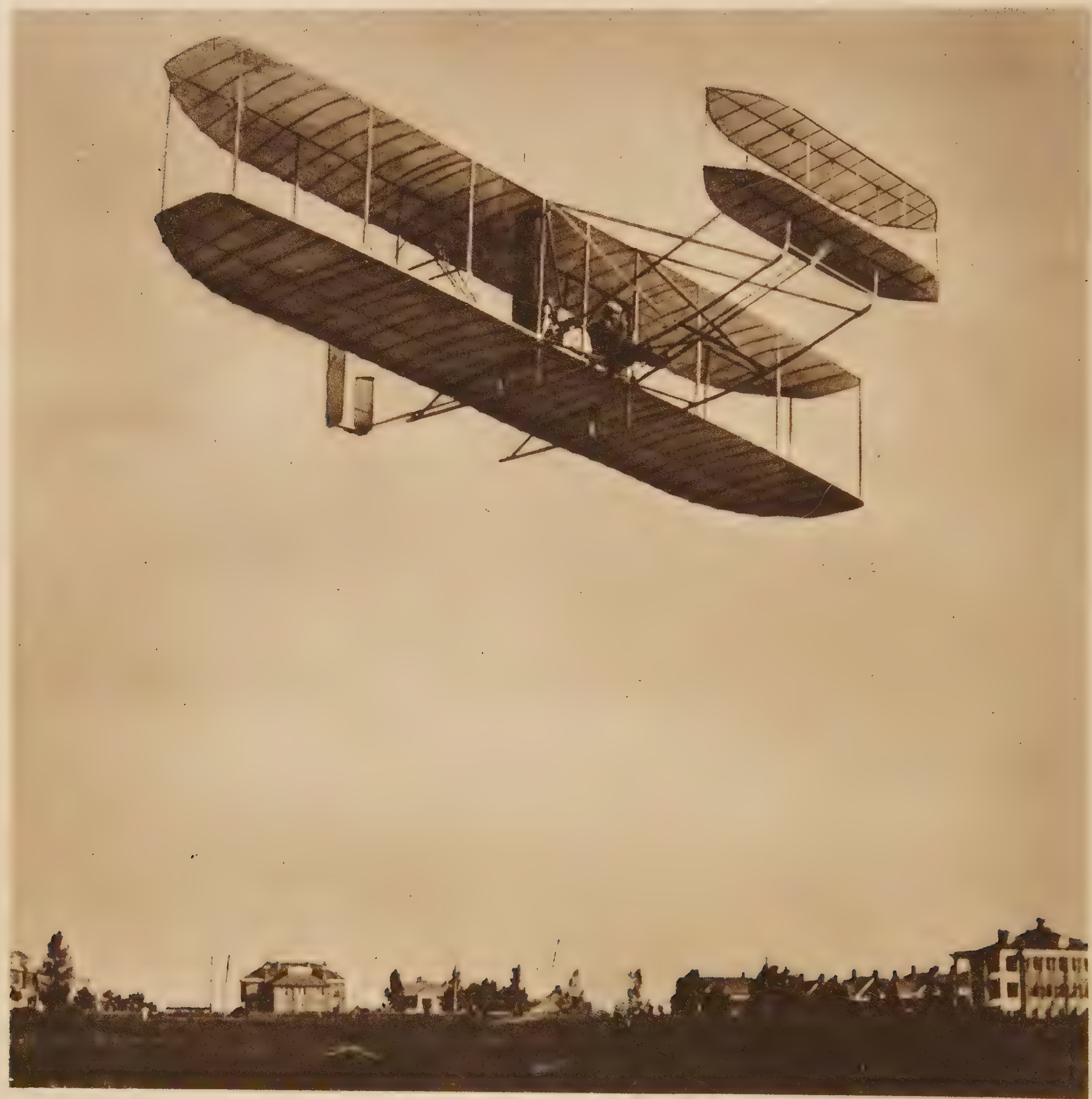
Within twenty-four hours an appreciative Germany raised $500,000—and in two months this became $1,500,000. "Zeppelin III" was brought out and refitted, taken by the Government and became "Zeppelin I" of the new series.

Emperor Wilhelm witnessed her demonstration (November 1908) and in later decorating the Count called him the "Greatest German of the Century." We shall meet him in Berlin the following year.

"La Republique" (below), third French Government airship (semi-rigid) had a brilliant but brief career. Launched (July, 1908), she made numerous flights, then was wrecked in the air (September 1909) when a broken propeller gashed her envelope. She collapsed and fell, carrying her crew of four officers to death.

FRENCH GOVERNMENT'S THIRD AIRSHIP, THE "REPUBLIQUE" (Below) Ernest L. Jones Collection.

ORVILLE WRIGHT *Flies for* GOVERNMENT *in* AMERICA



OFFICIAL PHOTOGRAPH IN ARCHIVES OF THE UNITED STATES ARMY AIR CORPS

ORVILLE WRIGHT is seen here at Fort Myer, Virginia, the United States Army post opposite Washington, (September, 1908). He is demonstrating the Wright airplane for Uncle Sam. Heartened by the glorious success already attained by Wilbur Wright in France, the brother in America is prepared to make good on the Army airplane contract, contingently awarded to the brothers earlier in the year.

The Chief Signal Officer of the U. S. Army had issued specifications (December 1907) and invited bids for a military flying machine. Bids were received from the Wright brothers for a biplane to cost $25,000, and from Augustus M. Herring, Chanute's former partner, for a biplane at $20,000. Both bids were accepted, but only the Wright contract was carried out. The specifications were severe. The machine must carry two men aggregating 350 pounds, remain aloft continuously one hour and maintain an average speed of 40 miles an hour in a round-trip cross-country flight over a ten-mile route.

The Wright brothers' machine was fully capable of fulfilling the Washington conditions; Orville Wright had no misgivings about this when he started to fly at Fort Myer.

PART X

RACE *of the* NATIONS *in the* NEW CONQUEST

GOVERNMENTS *Begin to* BUILD AIRSHIPS *and* AIRPLANES

AMERICA has given to the world a force that is to "change the course of civilization." The nations are awakening to its possibilities. While Wilbur Wright (1908) is the "Paul Revere of the New Age," arousing Europe to the "Coming Evolution," Orville Wright is in action back home in America.

The First Official Government Flight of the Wright Machine in America is made at Fort Myer (September 4, 1908). Orville Wright stays up in the air four minutes (September 5) and "the crowd went crazy." He breaks the world record by staying in the air 1 hour, 5 minutes (September 10, 1908).

The First Passenger in Official Flight with Orville Wright is Lieut. F. P. Lahm, later Brigadier-General, (September 10, 1908). Wright's diary shows that in test flight he has taken up his mechanic, Charley Furnas (May 14, 1908) in an experiment before undertaking the official passenger flight.

The Second Official Passenger with Orville Wright is Major George O. Squier, Acting Chief Signal Officer of the United States Army (September 12, 1908), for a "tour of nine minutes." On this same day he establishes a new world record of "1 hour, 14 minutes, at an altitude of 250 feet."

These "triumphs" are suddenly followed by the "World's First Airplane Tragedy" (September 17, 1908) when Lieut. Thomas Selfridge, assigned by the War Department as passenger with Orville Wright, is killed in a crash at Fort Myer; Orville Wright lays in the Military hospital for seven weeks. Wilbur Wright, in France, four days after his brother's accident in America, answers the challenge of fate by establishing a new world record exceeding an hour-and-a half, thus "restoring public confidence with his courage and daring."

The Langley Medal is established by the Smithsonian Institution (December 15, 1908) "to be awarded for specially meritorious investigations in connection with the Science of Aeronautics and its application to aviation." The World's First Aerial Photograph is taken at the Alaska-Yukon-Pacific Exposition at Seattle (1908) by J. C. "Bud" Mars in the Dirigible "A-Y-P." The year (1908) ends with the "First Great Aeronautical Salon" held in Paris.

The First Airplane Flight in Canada takes place (February 23, 1909) by McCurdy; the First Civil Purchase of an Airplane in America is made from Glenn Curtiss (March 3, 1909); the First Motion Pictures from an Airplane are taken of the Wrights in France (April 24, 1909).

Glenn Curtiss is coming rapidly to the front in America as he makes the First Exhibition Airplane Flight in New York City of the first Curtiss airplane (June 26, 1909) to be followed by many new record flights. Leo Stevens, one of the greatest of the pioneer American aeronauts, continues his historic air voyages, while Hunnewell and the famous pilots break balloon records in America.

There are now (1909) forty aviators in the world, making trial flights in airplanes; with a constantly increasing group of airship pilots and more than a hundred balloonists. Twenty years more and 40,000 are to be engaged in the air industry.

First AIRPLANE PASSENGER *in* AMERICA—*Lieut.* LAHM—1908

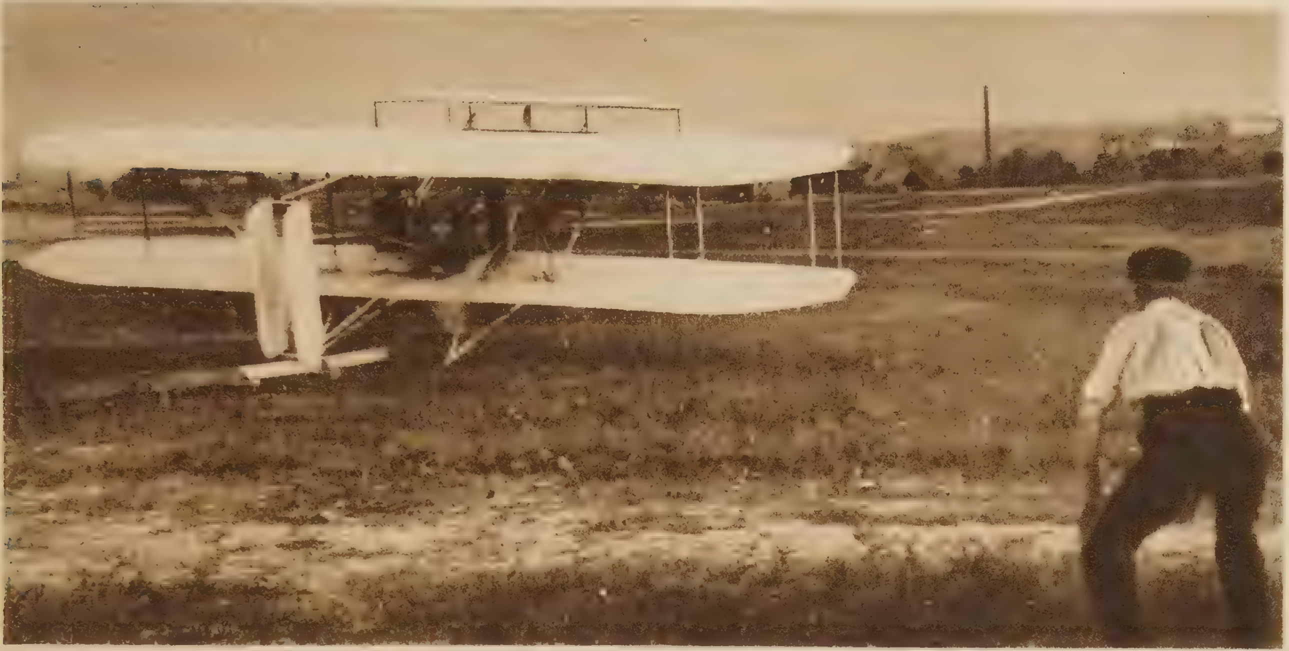
KATHERINE WRIGHT, SISTER OF THE FAMOUS BROTHERS, with Orville at Fort Myer.

The two men (right) are Lieut. Thomas E. Selfridge (left) and Alexander Graham Bell of the Aerial Experiment Association, who are at Fort Myer to witness the Wright tests. Lieut. Selfridge is soon to become the first air passenger in the world to meet death in a crash.

Orville Wright makes a few brief preliminary flights, then suddenly astonishes all America by flying above the Fort Myer drill ground for 57 minutes and 31 seconds (September 9, 1908). The same evening, when an international throng of distinguished visitors have gathered, he remains in the air one hour and three minutes!

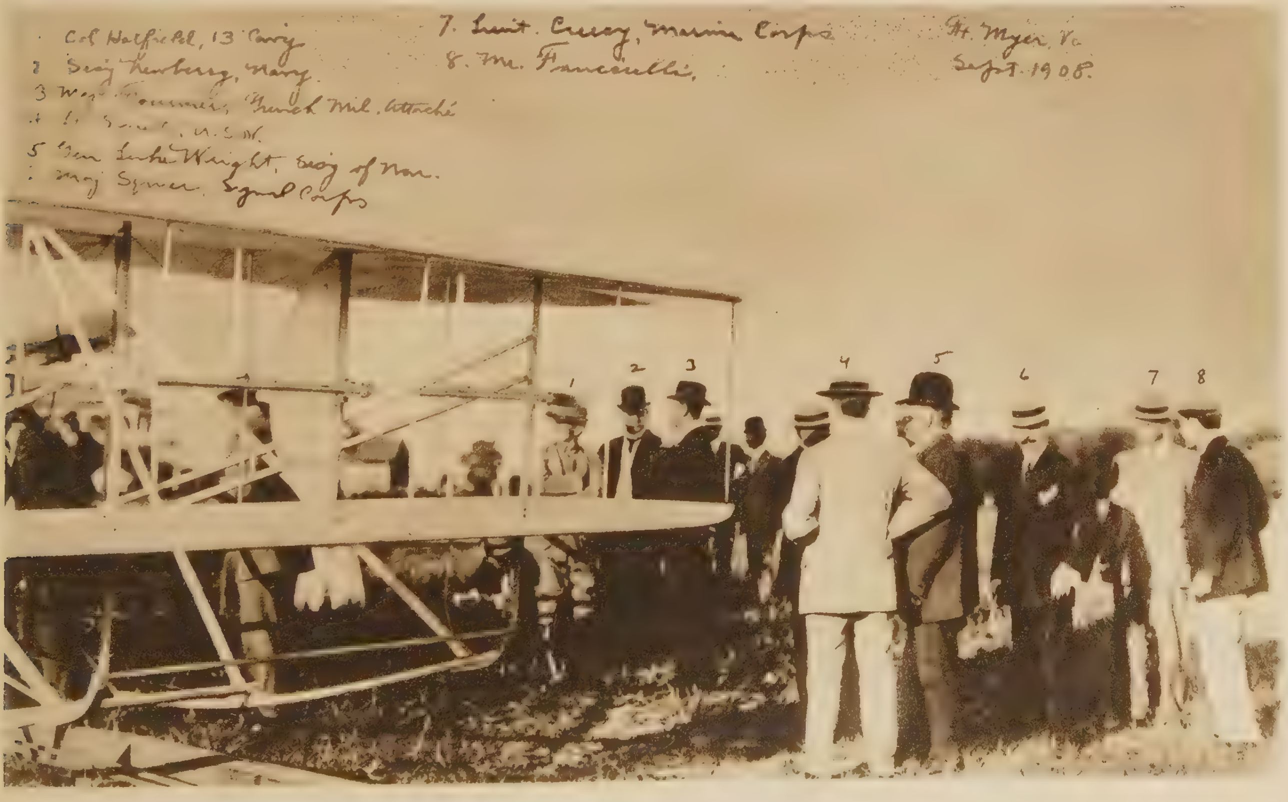
Immediately thereafter he takes up the first air passenger in America, Lieut. Frank P. Lahm of the Army (above, right), famous on his own account as a balloon champion.

CABINET *Officials Witness* FLIGHTS *by Orville* WRIGHT



ORVILLE WRIGHT TAKES OFF FROM FORT MYER STARTING RAIL (Above)—The Wright brothers, Wilbur in France and Orville in America, utilized the starting monorail for their airplane take-offs during all their early flying. (Underwood and Underwood Collection).

HISTORIC GROUP AT FORT MYER FOR WRIGHT AIRPLANE TRIALS (Below)—This Official Washington group gathered at Fort Myer to watch Orville Wright fly, includes among others: The Secretary of War, Gen. Luke E. Wright of Tennessee (No. 5), and the Secretary of the Navy, Truman H. Newberry of Michigan (No. 2). Official photograph from records of U. S. Army Air Corps (Jones Collection).


1 Col Hatfield, 13 Cav'y
2 Sec'y Newberry, Navy.
3 Maj. Fournier, French Mil. Attaché
4 Lt. Sweet, U.S.N.
5 Gen Luke Wright, Sec'y of War.
6 Maj Squier. Signal Corps
7. Lieut. Creecy, Marine Corps
8. Mr. Fanciulli,
Ft. Myer, Va
Sept. 1908.
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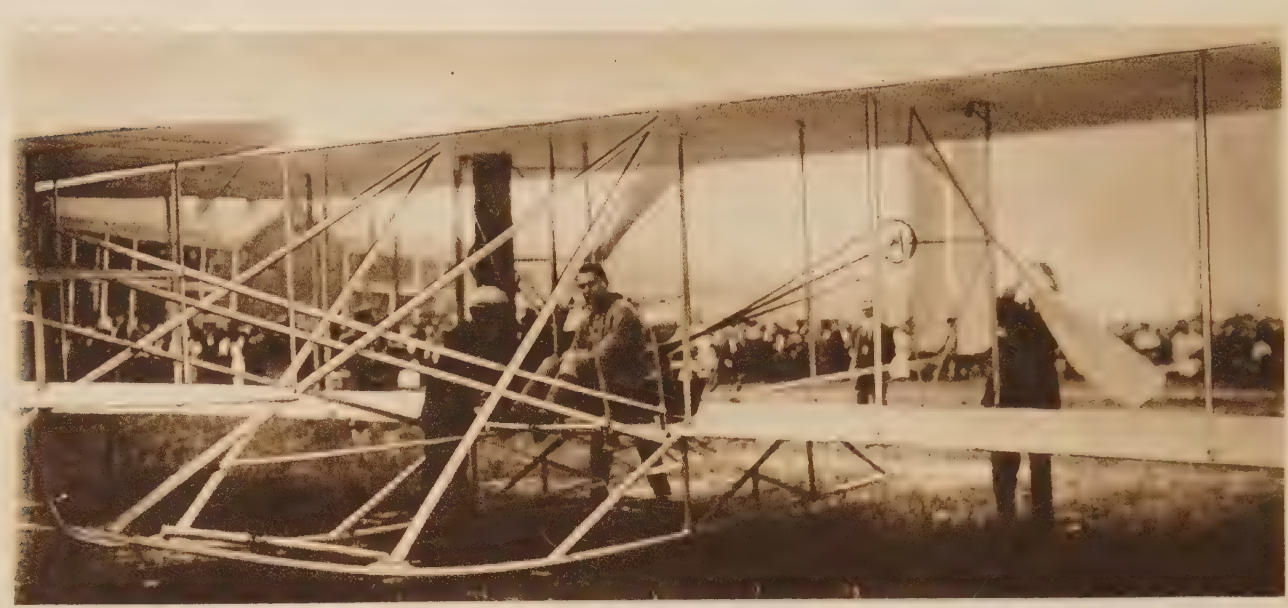
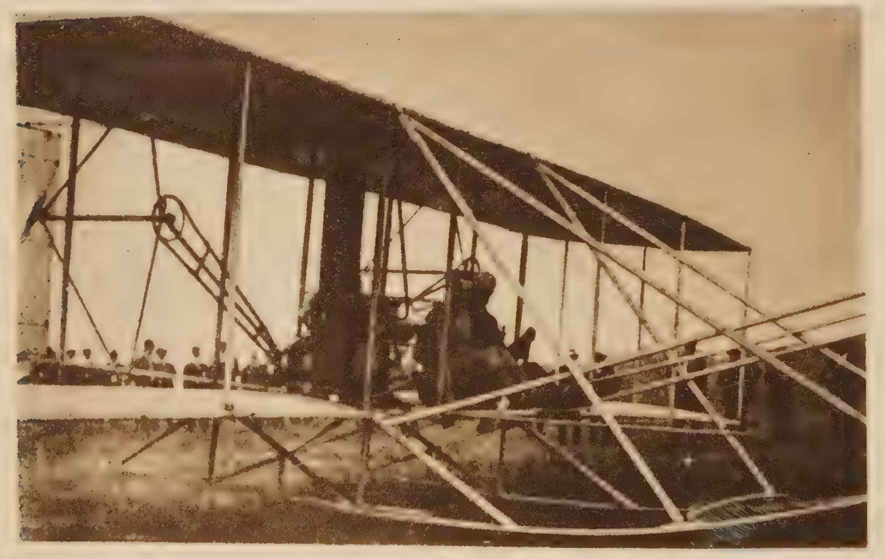
WORLD'S *First* AIRPLANE CRASH—*Selfridge* KILLED—1908



LIEUT. SELFRIDGE IN WRIGHT PLANE JUST BEFORE FATAL FLIGHT (Above)
Orville Wright is starting the engine. Photographs in Brown Brothers Collection.

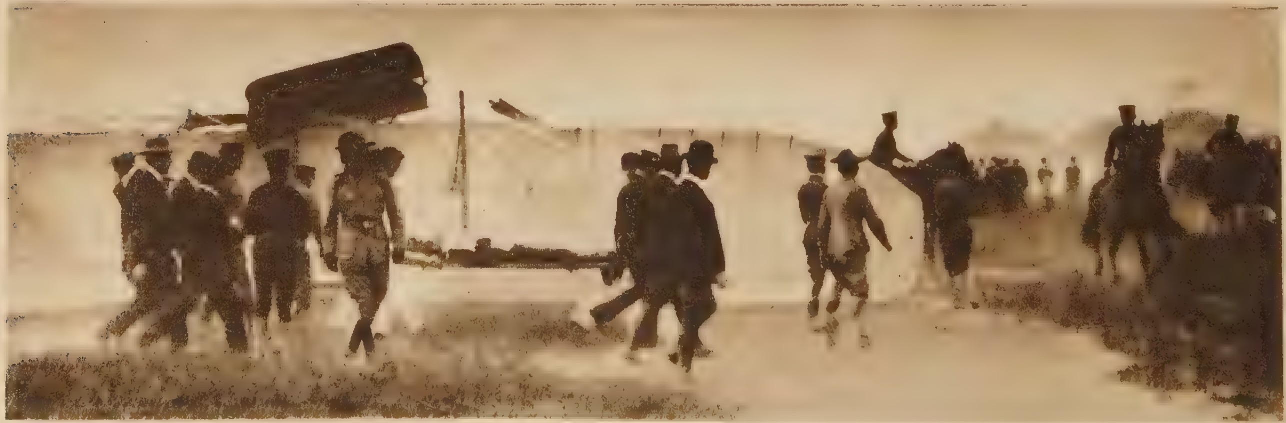


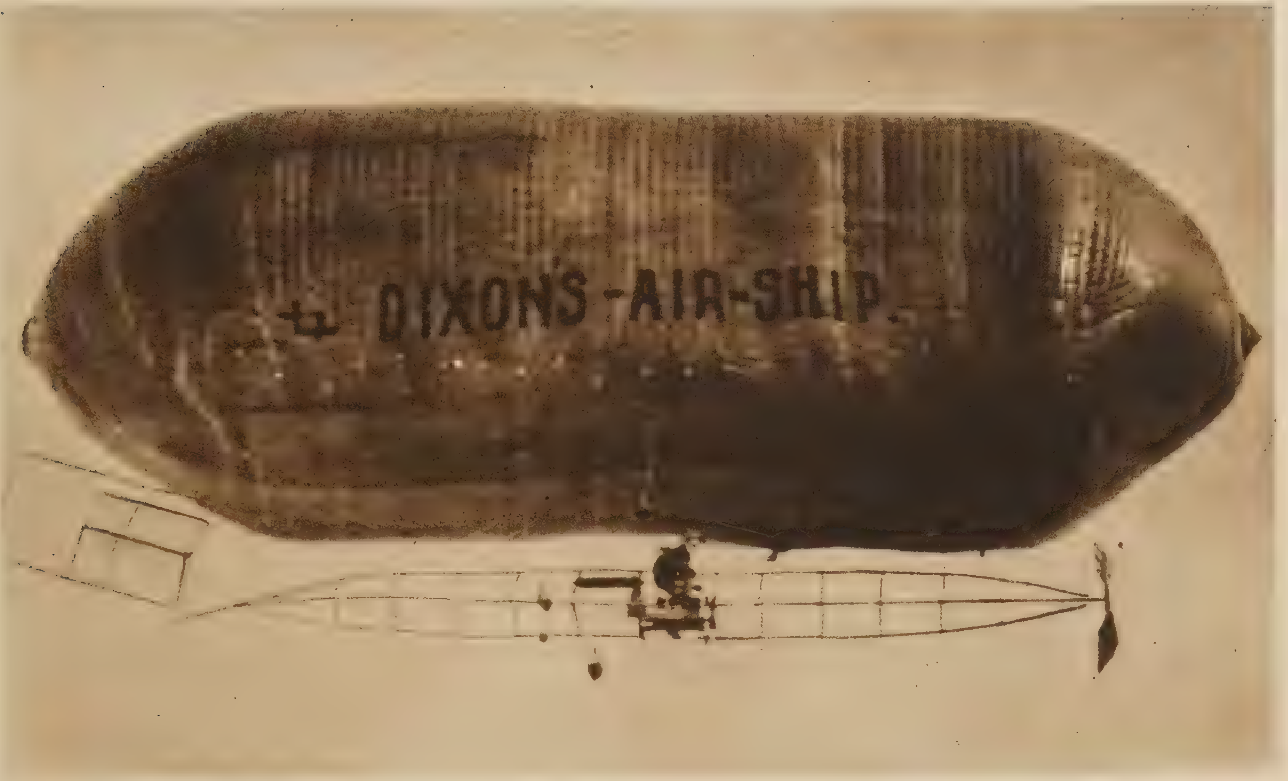
LIEUT. THOMAS E. SELFRIDGE, U. S. A., was the world's first airplane victim. The popular young Army officer, designer of the first Curtiss plane, "Red Wing," now became Orville Wright's third air passenger (September 17, 1908).

They were flying at 75 feet altitude—when suddenly a propeller blade struck a stay wire and was snapped off. The airplane became unmanageable and fell in a crash, throwing its two occupants out.

Lieut. Selfridge died without recovering consciousness. Orville Wright's left thigh was fractured and two ribs were broken, ending his flying for the year. The photograph (left) by C. H. Claudy, showing both in the plane, is the last ever made of Lieut. Selfridge.

ORVILLE WRIGHT CARRIED FROM THE FIELD AFTER FIRST FLYING ACCIDENT





AMERICA'S YOUNGEST AIRSHIP PILOT—CROMWELL DIXON (Above)—We find this highly skilled young aeronaut flying over his home town of Seattle (1909), after having had more than two years' experience in the air. He was but 14 when he appeared at America's first air meet (St. Louis, 1907) with this airship of his own construction, to compete with much older men. He was killed in a crash at Spokane (1911). Photograph in Acme Collection.

THE FIRST BALLOON HONEYMOON IN AMERICA (Below)—George B. Harrison of Los Angeles (left) accompanied Mr. and Mrs. Charles A. Coey of Chicago on the first American balloon honeymoon journey (March 25, 1909) in the balloon "Chicago" piloted by Mr. Coey, well known aeronaut, from Los Angeles to San Fernando, California. The balloon landed in a barley field and the basket was dragged 30 feet, but Mrs. Coey scrambled out laughing. Photograph in Jones Collection.

CURTISS *Makes First* AIRPLANE *Flight in* NEW YORK—1909

FIRST FLYING FIELD IS ESTABLISHED AT MINEOLA (Above)—Jones Collection.

GLENN CURTISS made the first airplane flight in New York City (June 26, 1909) at the old Morris Park Race Track. At Hammondsport, he had built a plane for the newly-organized Aeronautical Society of New York and he flew this at Morris Park, which the society planned to make New York's aviation headquarters. But Curtiss persuaded them to locate permanently instead at Hempstead Plains, Mineola, Long Island.

The field at Mineola was so fine for flying that Curtiss flew 24 7/10 miles there at an average speed of 35 miles an hour to win his second leg on the Scientific American trophy (July 17, 1909). He had first won this at Hammondsport on Independence Day (1908). Charles M. Manly was official observer of the flight.

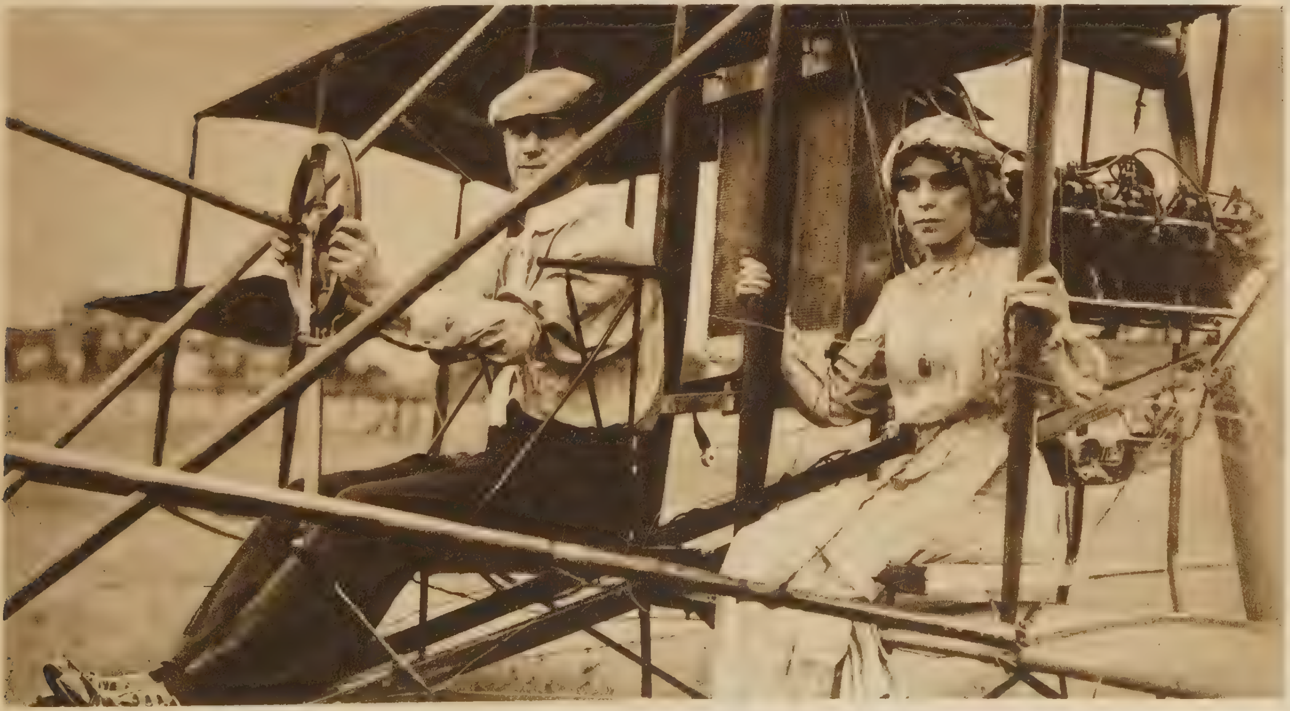
MRS. CURTISS SITS AT WHEEL OF HUSBAND'S PLANE (Below)—Brown Brothers Collection

J. C. (BUD) MARS AND MRS. CURTISS WATCHING GLENN CURTISS FLY (Above)

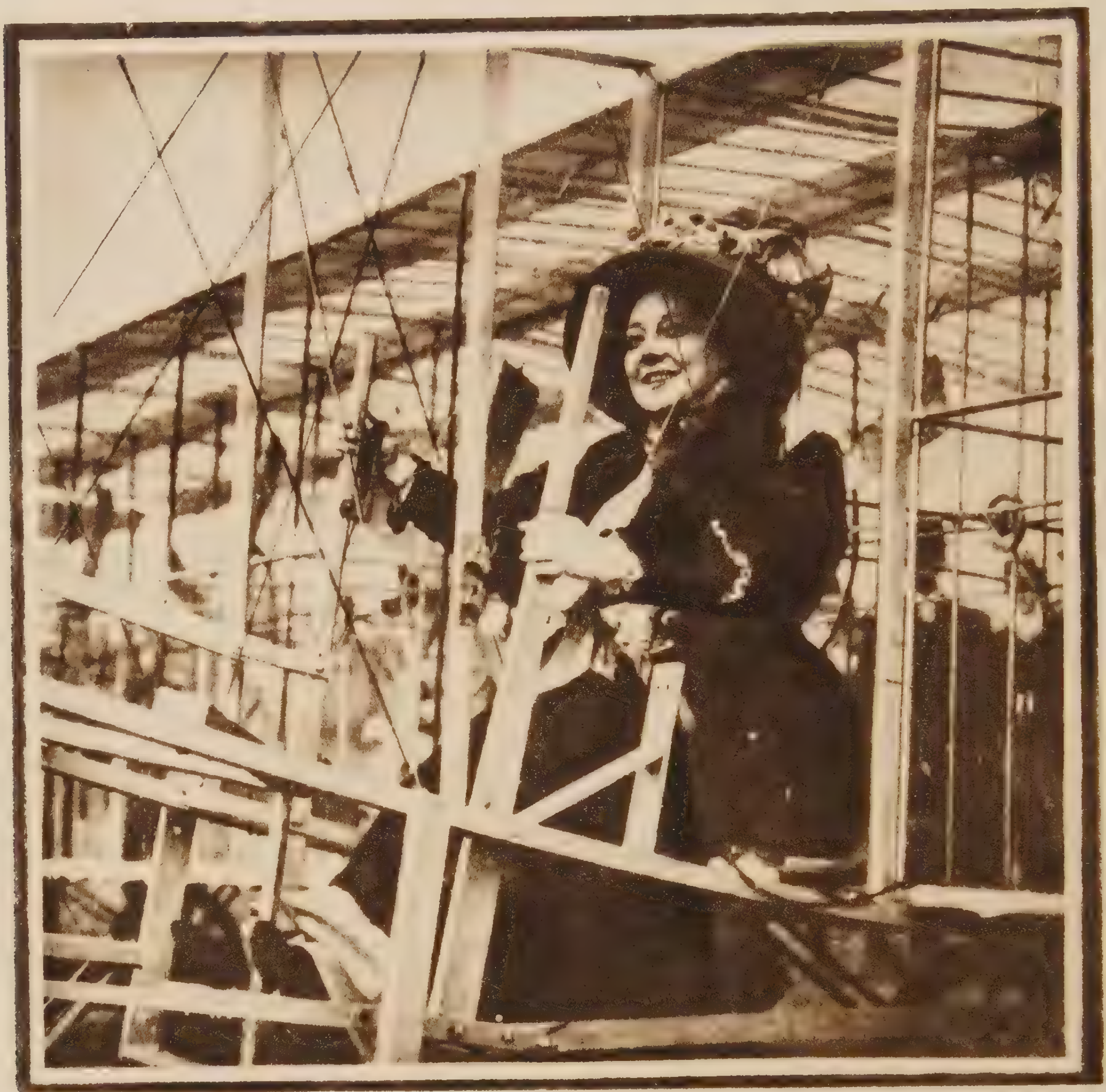
J. C. (BUD) MARS was one of the first to fly a Curtiss plane outside the Aerial Experiment Association. Mars, who was long associated with Capt. Tom Baldwin in aerial exploits, was well known as a daring parachute jumper and skilled airship pilot before he took up the airplane. He campaigned with Curtiss and J. A. D. McCurdy of the Hammondsport group (1909–1910) and taught Lincoln Beachey to fly an airplane in San Francisco (1910).

In the group (above) are, left to right, Bud Mars, Mrs. Mars, Mrs. Curtiss and Mrs. Eugene Ely, whose husband was also one of the earliest of the Curtiss fliers. In the Curtiss plane (below) are Pilot Mars and Mrs. Mars. Photographs in the Brown collection.

BUD MARS AT WHEEL OF CURTISS PLANE—MRS. MARS IS HIS PASSENGER (Below)



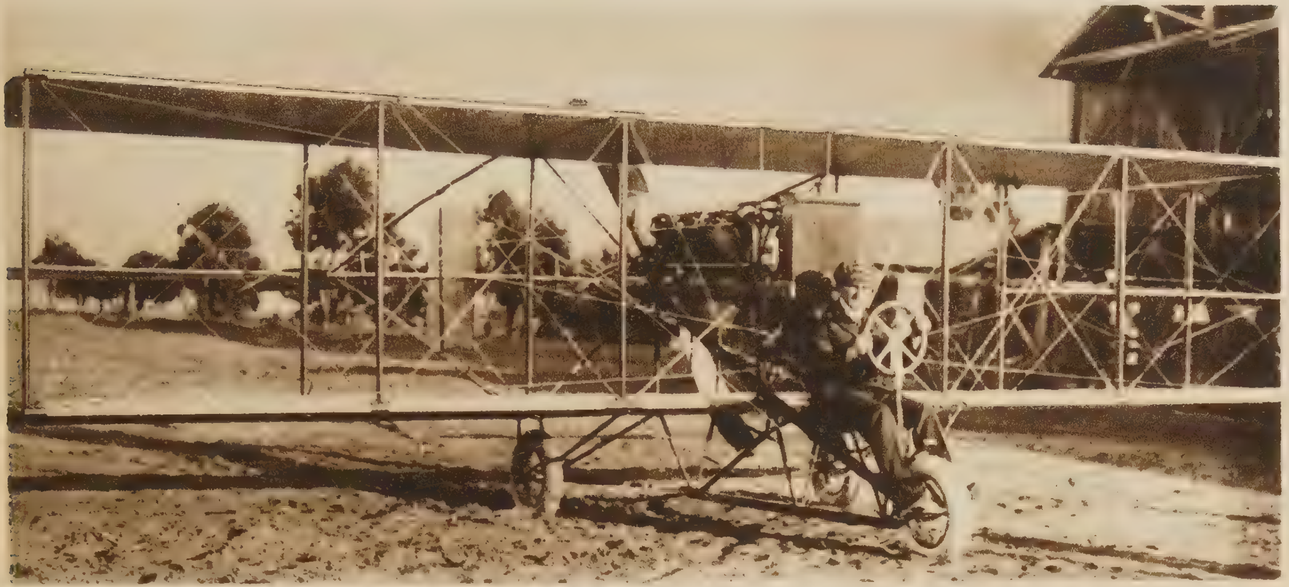
ACTRESS *Christens* FIRST PLANE *Built in* NEW YORK—1909

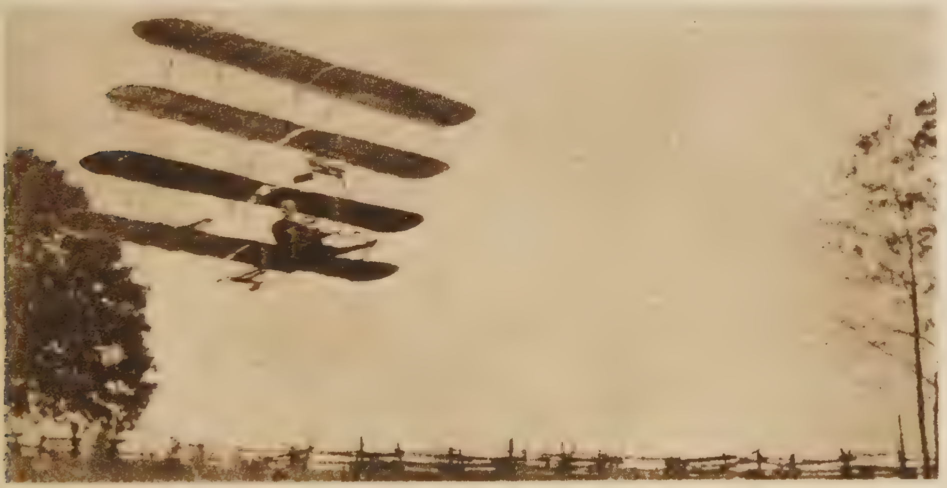


ANNA HELD, Famous Actress in Paris and America, is shown (above) at the controls of the Curtiss plane owned by Wilbur R. Kimball of New York, which the actress has just christened "New York the First" at Hempstead Plains, Mineola (July 1909). This was the first airplane to be constructed upon the grounds there of the Aeronautical Society of New York, of which Mr. Kimball was a prominent member.

Anna Held was singing an airplane song in her Broadway show at the time with a property airplane which she used on the stage—hence was regarded as a suitable sponsor for the Kimball plane. Photograph of Miss Held (above) by F. J. Parrott and of the crowd on Hempstead Plains in the International Collection.

First FLIGHT *of Airplane* BUILT *on* PACIFIC *Coast*—1909





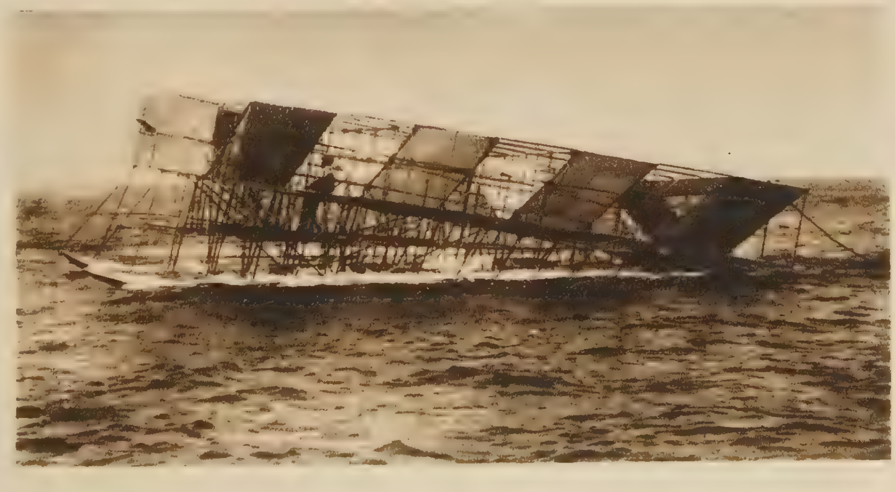
CHARLES F. WALSH of San Diego, California, built the first airplane on the Pacific coast, a biplane resembling the Curtiss in type, with a single propeller (1909). Walsh is shown at the controls of the plane, which he built and flew at Imperial Beach. The photograph (above) was made upon the site of the present Rockwell Field, largest of the United States Army fields on the Pacific coast. Print in the Underwood and Underwood Collection.

SELLERS' FOUR-STEP GLIDER AS A POWERED AIRPLANE (Above)

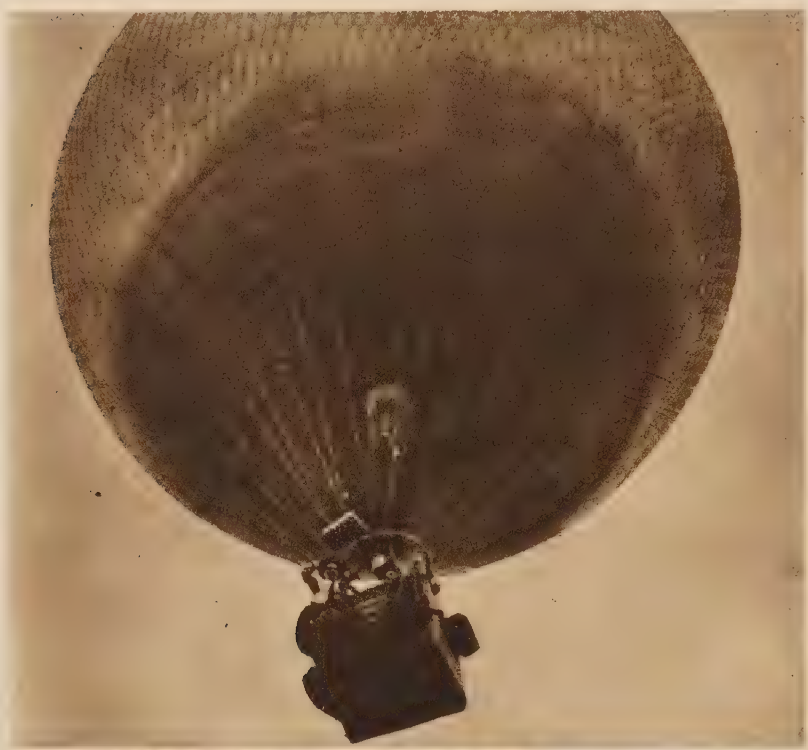
ISRAEL LUDLOW, New York Sportsman, created a real sensation (1909) with the odd-looking great flying contrivance (right), in which he and others made flights in the vicinity of the Metropolis, taking off from the water usually.

The difficulty with the Ludlow flying machine was that it lacked ability to land safely, and about every time it came down after a flight, it crashed.

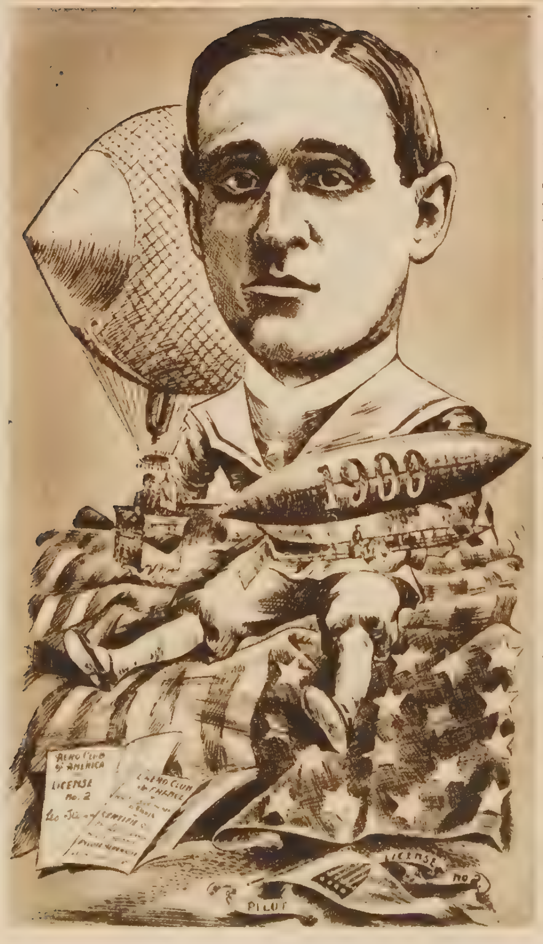
Finally (1910) Ludlow attempted to fly it at Daytona Beach, Florida, and came down in a crash in which he was seriously injured. Paul Thomson Collection.



Pioneer AMERICAN AERONAUT *on Historic* AIR *Voyages*—1909



THIS very unusual photograph (left) in the Jones Collection shows how a balloon, 200 feet above the earth, looks to one on the ground. Mrs. E. G. Peebles of North Adams, well-known woman balloonist of the time (1909), and Leo Stevens are in the balloon basket, at the start of an air journey which terminated in New York State.


1909
AERO CLUB OF AMERICA LICENSE No. 2
PILOT
LICENSE No 2

LEO STEVENS of North Adams, Massachusetts—Aeronaut, balloon builder and pilot, airship constructor and navigator—a celebrated name in early American aeronautics.

We see him (left) in a cartoon depicting his varied aerial activities which appeared in America's first air journal, *Aeronautics* (1909).

Stevens built many balloons and airships and piloted these all about America.

In his airship (right) Leo Stevens is high above Brighton Beach, New York (1909).

Photographs in the Ernest L. Jones Collection.

Famous PILOTS *Break* BALLOON RECORDS *in* AMERICA—1909

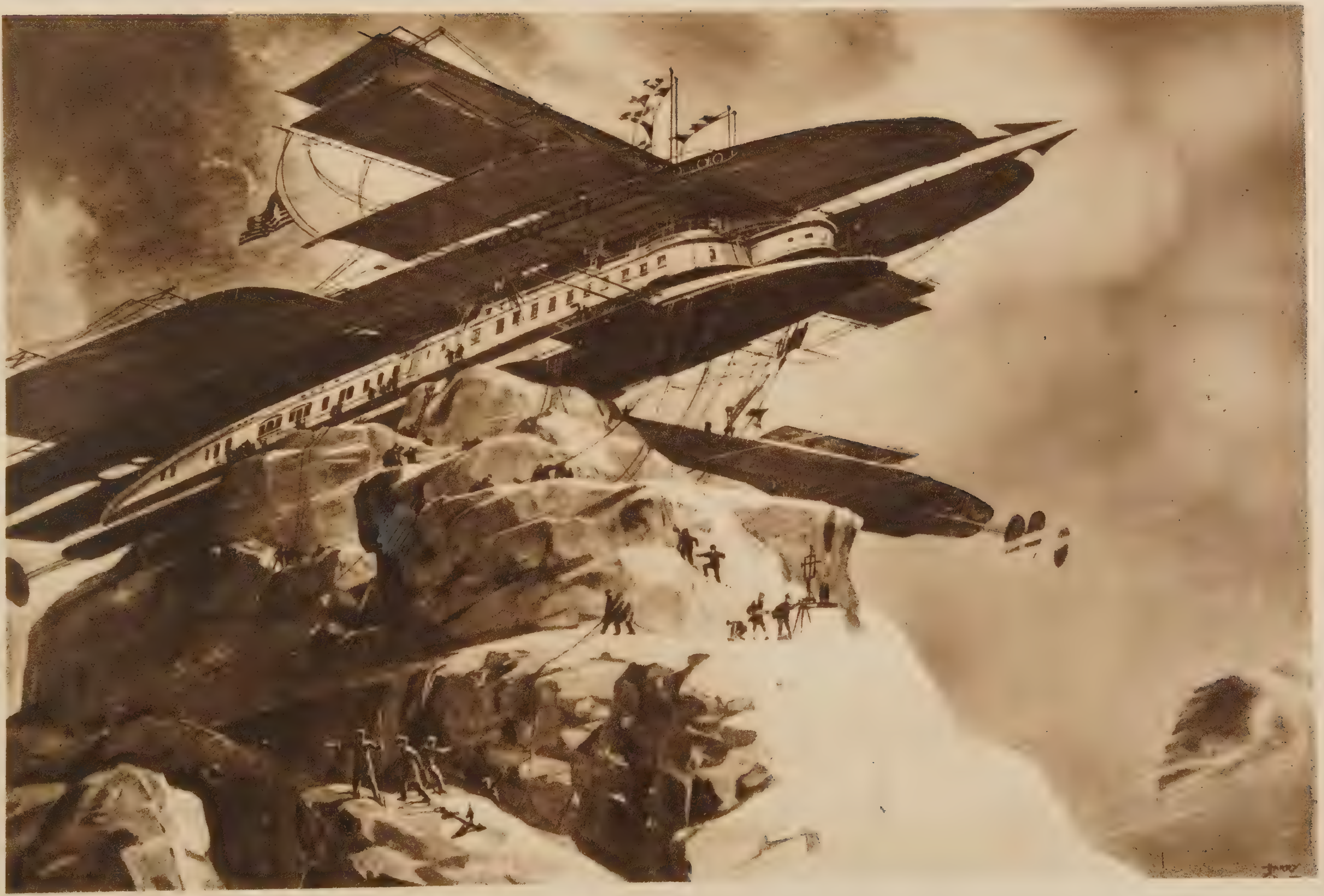
E. H. HUNNEWELL of St. Louis became very prominent in aeronautics in the heyday of American ballooning (early 1900's) and piloted many air voyages over long stretches of the North American continent. He is shown (left) about to start from St. Louis with a party of well-known St. Louisans (1909). Hunnewell is on the extreme right of the group, leaning over the edge of the balloon basket.

This year (1909) was marked by the St. Louis aeronaut's winning the balloon race of the Peoria Chamber of Commerce (August 19). With G. E. Smith of St. Louis, he travelled 230 miles under adverse conditions. Hunnewell's most notable balloon flight was the year before (July 4th, 1908), when he won the balloon race of the American Federation of Aero Clubs, starting from Chicago, and broke the American balloon distance record, 876¾ miles, established 1907.

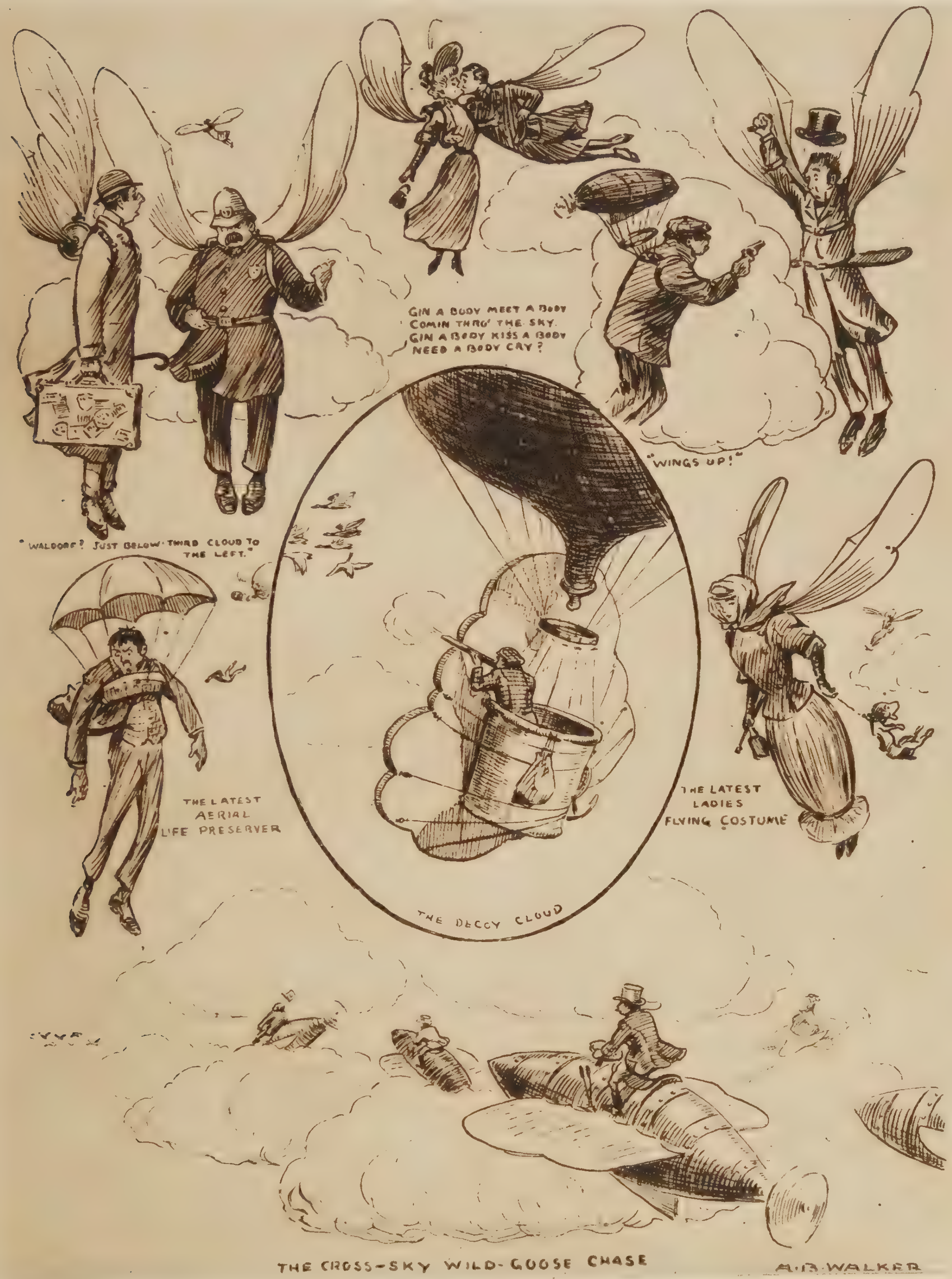
In the balloon "Fielding," Hunnewell and Dr. F. D. Fielding of San Antonio, Texas, sailed from Chicago to West Shefford, Quebec, a distance of 895 miles. This stood as the record for two years thereafter.

The photograph (below) from the Acme Collection shows J. A. D. McCurdy, original Curtiss pilot, showing the first airplane purchased by the United States Government to Secretary of War Jacob M. Dickinson (1909).

SECRETARY OF WAR DICKINSON INSPECTS FIRST UNITED STATES GOVERNMENT PLANE (Below)

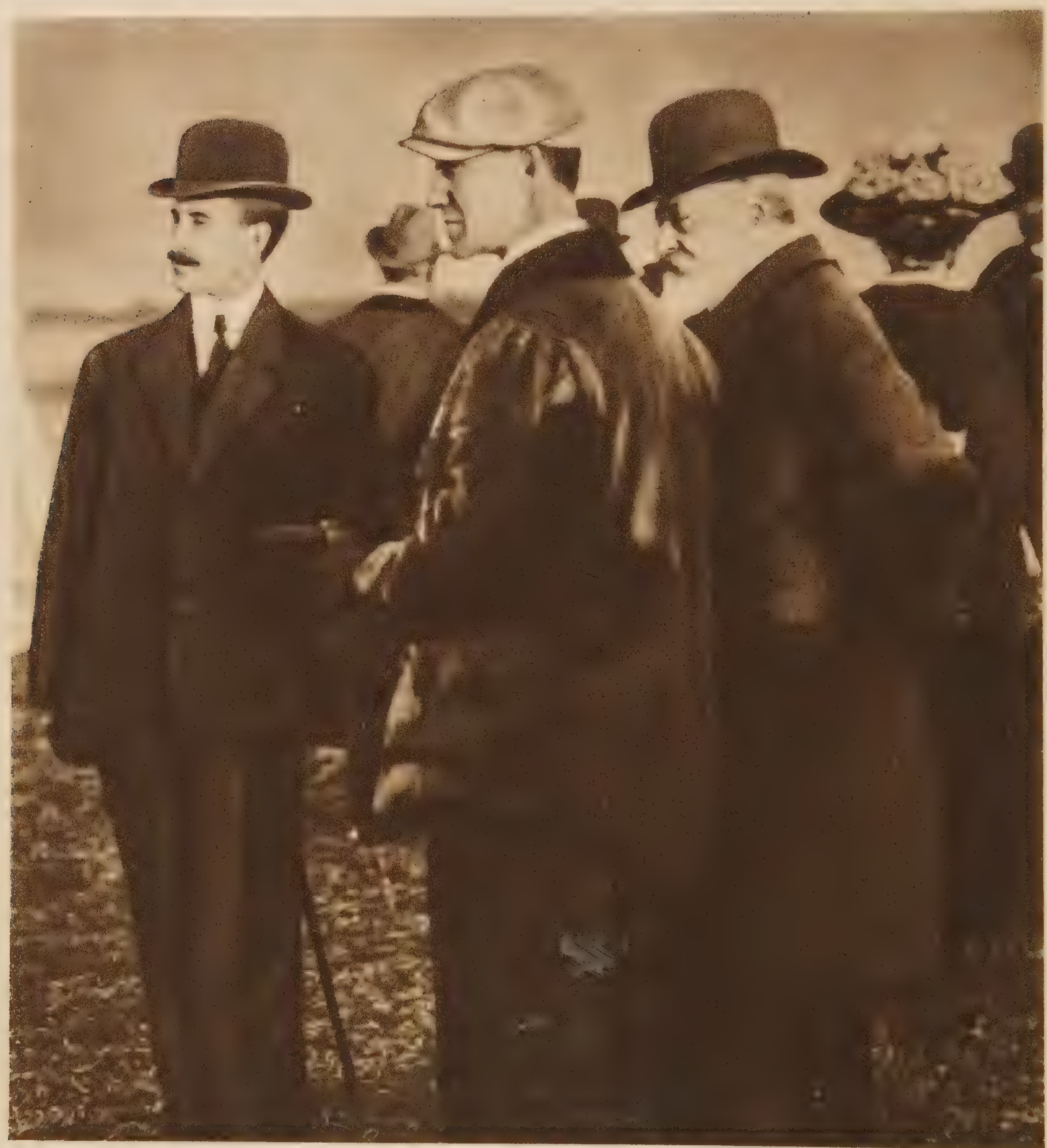


THE "TRANSCONTINENTAL FLYER," LOST IN STORM, STRANDED ON A HIGH ROCKY MOUNTAIN PEAK—Imaginative Drawing by famous American artist, Harry Grant Dart (1909), which gives an imaginative conception of the New Age of the Air.


"WALDORF? JUST BELOW THIRD CLOUD TO THE LEFT."
GIN A BODY MEET A BODY COMIN THRO' THE SKY. GIN A BODY KISS A BODY NEED A BODY CRY?
"WINGS UP!"
THE LATEST AERIAL LIFE PRESERVER
THE DECOY CLOUD
THE LATEST LADIES FLYING COSTUME
THE CROSS-SKY WILD-GOOSE CHASE
A.B. WALKER

"THE HIGHER LIFE"—CARTOON BY A. B. WALKER, NOTED AMERICAN ARTIST—Cartoonists in America, as well as in Europe, satirize the humorous possibilities of aerial advances and aeronautical situations. Walker's sketch (1909).

KING EDWARD *of Great* BRITAIN GREETS *the* AMERICANS



ROYALTY HONORS THE WRIGHTS—This Official Photograph in French and British Archives shows King Edward with Orville and Wilbur Wright. European royalty, and the distinguished and socially prominent the world over, flock to Pau to see the Wrights and their new air vehicle. The King of England moves from Biarritz to Pau and witnesses two exceptional flights by Wilbur. He heartily congratulates both the brothers. King Edward (right), Wilbur (center), Orville (left).

Orville Wright, recovered from his severe injuries at Fort Myer, had joined his brother Wilbur, performing so brilliantly in France, accompanied by their sister Katherine (January, 1909). Wilbur, highly successful in all tests at Le Mans, adjourned to Pau, in the South of France, where Orville and Katherine joined him (January 15). Print in Brown Brothers Collection in America.

PART XI

EUROPE *Pays* TRIBUTE *to the* AMERICANS

WRIGHTS TRIUMPH *in* FRANCE—ITALY—GERMANY—ENGLAND

HAILED AS CONQUERORS of the "New Realms of the Air," we follow the Wrights through Europe (1909) on the First Tour of Triumph ever extended to Aviators in the world's history. The Americans are being given the homage of Kings and Queens.

Five years more and the new invention of the airplane will be engaged in "Battles in the Clouds" in World War; ten years more and the Western Hemisphere and Eastern Hemisphere are to be joined in the First Transatlantic Airplane Flight Across the Atlantic by the English.

Orville Wright, convalescent from his accident in America, arrives in Paris (January, 1909) with his sister, Katharine Wright, to join Wilbur Wright in his European exploits. The World's First Aviators instructed by the Wrights are Count Charles de Lambert, experimental scientist—Paul Tissandier, sportsman—Captain Girardville of the French army.

The King of Spain greets the Wrights at Pau (February, 1909) with the exclamation: "What a marvelous invention your airplane is! I have looked forward to seeing this miracle for a long time. I would ask the great privilege of a trip in the air, except for one thing—My Queen and Cabinet made me promise not to do it."

King Edward VII arrives with his suite to witness the flight of Wilbur and Katharine Wright at Pau (March 17, 1909). King Victor Emmanuel of Italy witnesses the First Flight in Italy by Wilbur Wright on the Campagna within view of the ruins of the Caesars (April 1909). London "acclaims the Wrights as conquering heroes" (May 1909). Later in the year, we shall find them in Berlin.

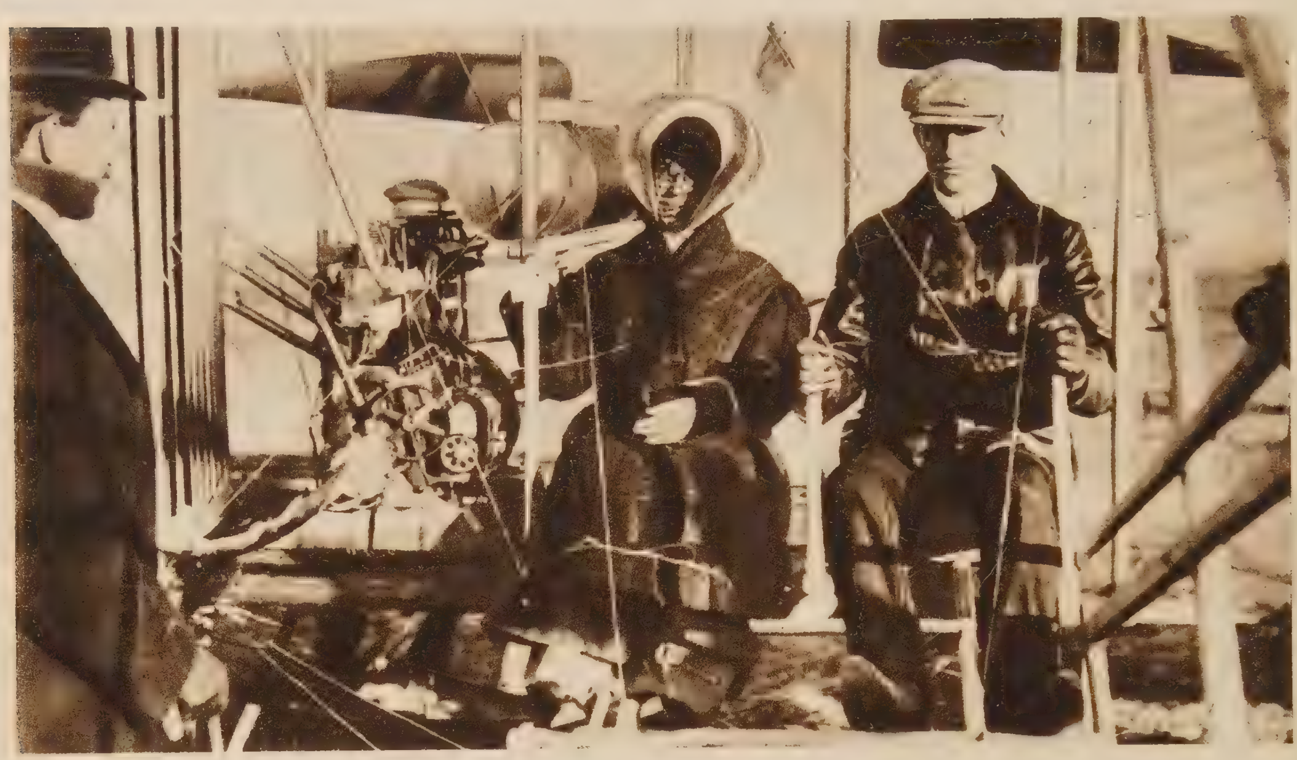
The great event in exploration during this period is Peary's discovery of the North Pole (April 6, 1909) by dog sledge over land, thus ending the thousand-year fight to reach the top of the world, with America as the victor. Seventeen years more and we shall see another American winning the same goal in the air. The year (1909) witnesses more than 450 airship ascents in America.

We witness at this time the First Airplane Flight in England (May 14, 1909) made by Colonel Cody, an American; Europe produces its first commercial passenger airship; the Wrights are honored at Windsor Castle; the World's Oldest Aeronautical Society banquets the American inventors in London and awards a Gold Medal.

We see the Wrights as they return to America from their European triumphs (June 1909); America is awakening at last to the importance of what these Americans have achieved. President Taft receives the Wrights at the White House (June 1909); the returning sons are greeted with a "Home Celebration" in Dayton (June 17-18, 1909). Medals are bestowed upon them by the United States Congress "in recognition of their ability, courage and success in navigating the air;" medals by the City of Dayton and the State of Ohio; the Langley Medal is conferred upon them as the "first recipients" by the Smithsonian Institution.

While these celebrations are taking place the first European aviators are entering into vigorous competition to wrest the honors from the Americans; the First Attempt to Cross the English Channel in an Airplane is made by Latham (July 19, 1909) to meet with failure.

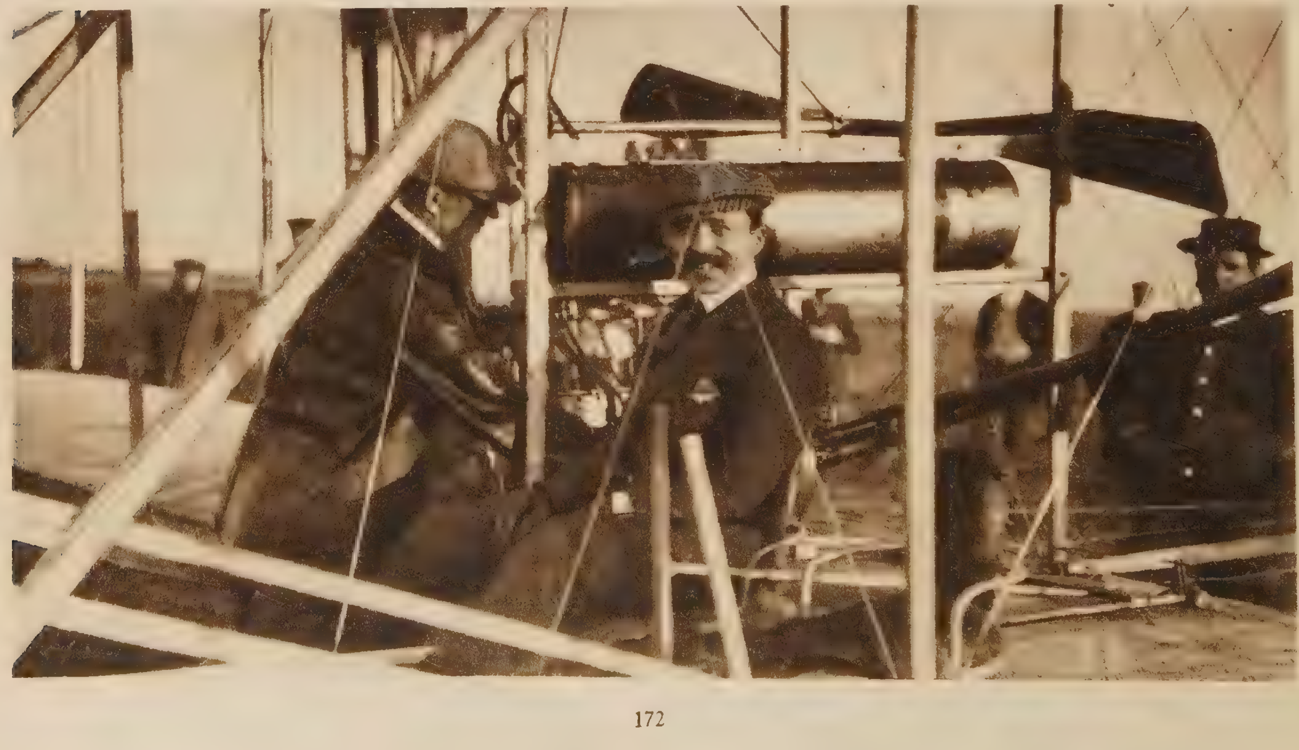
WRIGHTS *from* AMERICA *Instruct* EUROPE *How to* FLY—1909

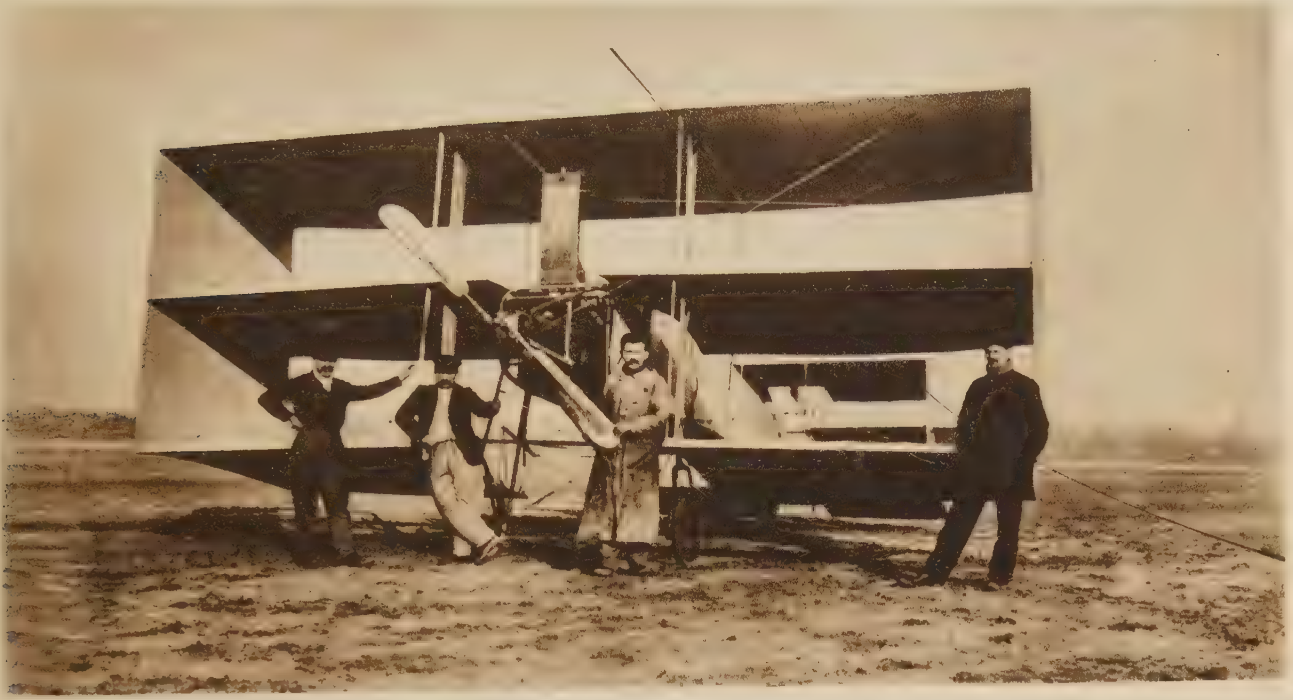


KATHERINE WRIGHT FLIES WITH WILBUR AT PAU—ORVILLE LOOKS ON (Above)

WILBUR WRIGHT'S chief purpose in going to Pau (January, 1909) with his first pupils—Count de Lambert, Paul Tissandier and Capt. Lucas Girardville—was to teach them to fly. The Wright machine was fitted with dual controls early in February and soon the Yankee genius, who had himself become a thoroughly accomplished flier in a few months, was tutoring the Frenchmen. The trio learned quickly and later did their instructor great credit while making names for themselves.

PAUL TISSANDIER, WRIGHT PUPIL, TAKES HIS FIRST FLYING LESSON (Below)



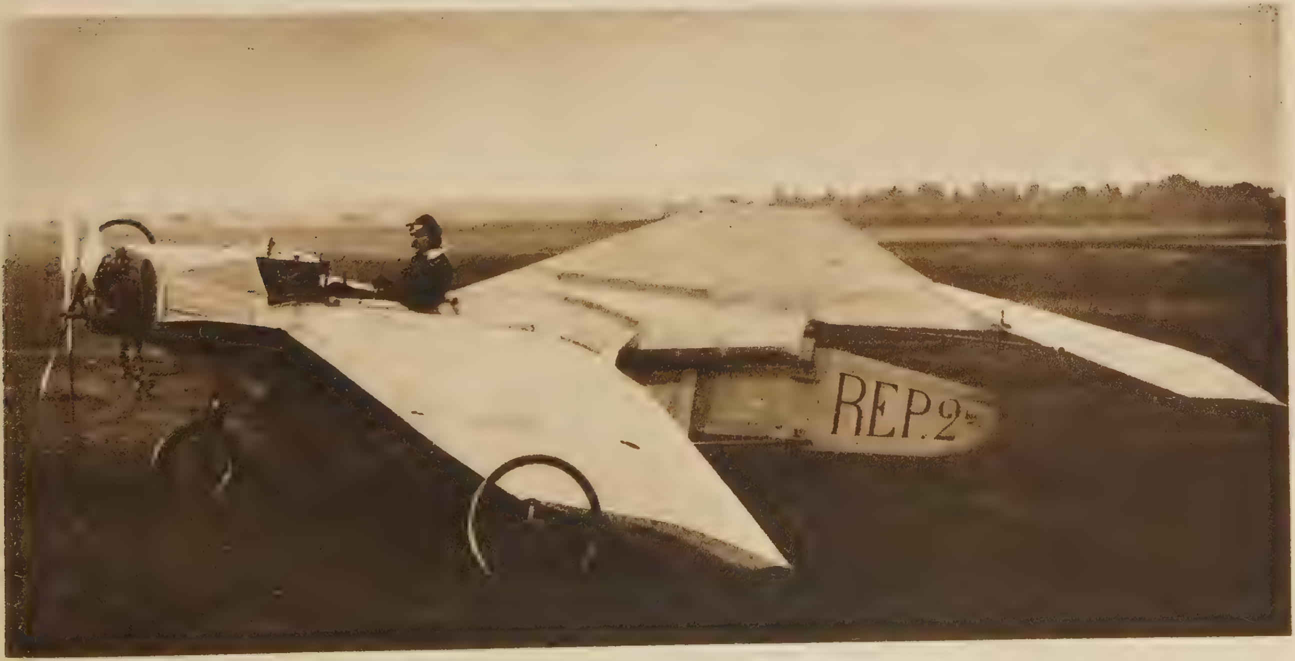


DISTINCTIVE FRENCH TRIPLANE, "GOUPY I," WITH HER INVENTOR (Above)—Jones Collection.

TWO FRENCH AIRPLANES of this period (1909), which attracted much attention, were Goupy's and Esnault-Pelterie's—the first a triplane and the other a monoplane. These French planes featured two marked differences from the Wright plane, already well established in France, or the Curtiss, which would cross the ocean this year. They operated with tractor propellers, where the American machines were of the pusher type; and they used tails, which had been discarded early by the Wrights and not yet used by Curtiss.

Esnault-Pelterie's monoplane, whose earlier model we have seen, was to give an especially good account of itself. A strong factor in its success seemed to be the air-cooled motor invented by its builder, in distinction from the water-cooled, automobile style of engine mostly used in airplanes. This was one of the first air-cooledairplane motors ever used.

ESNAULT-PELTERIE'S STRIKING MONOPLANE IN IMPROVED FORM (Below)—Paul Thompson Collection.



FIRST AIRPLANE *Flight in* ENGLAND, *Made by* CODY—1909

COLONEL SAMUEL E. CODY, American aeronaut and inventor attached to the Balloon Section of the Royal Engineers as a military aviation specialist, was the "First Man to Fly an Airplane in England" (May 14, 1909)—six years after the Wright brothers flew at Kitty Hawk and three years after Santos-Dumont made the first airplane flight in Europe.

At Laffan's Plain, in a biplane of his own construction, Cody flew 1,200 yards with complete success. His machine had a wing spread of about 40 feet and two two-bladed propellers driven by an 8-cylinder, 50-horsepower Antoinette motor.

Just how Cody, an American, came to be in England the record does not state. He was a born inventor and skillful mechanic who worked over his planes with the utmost patience and never attempted to fly one until perfectly sure it was as good as he could make it. He had been experimenting with box kites for several years and had attracted attention when one of his kites reached an altitude of 1,600 feet carrying a man (1905). Cody's biplane was a development of his box kites.

The aviator next fitted an 80-horsepower motor to his plane and made a flight of over 4 miles over Laffan's Plain (July 21, 1909). The next month he began carrying passengers, the first being Colonel Capper of the Royal Engineers (later to be the parent of the Royal Flying Corps). Finally Cody brought aviation honors to England by breaking the world's record for cross-country flight with a circular flight of 46 miles in 66 minutes (September 8, 1909).

We shall find Cody later this year taking a prominent part in the first Aviation Meet in England (October 16-23, 1909). The Cody photograph (left) showing him in flying clothes outside his hangar at Laffan's Plain, is in the Paul Thompson Collection. In the group (below) Sir Hiram Maxim (shown in conversation with Cody) and other friends have come out to the flying field to watch his experiments. Photograph in the Brown Brothers Collection.

OFFICIAL PHOTOGRAPHS OF COLONEL CODY AS HE BREAKS WORLD RECORD IN ENGLAND.

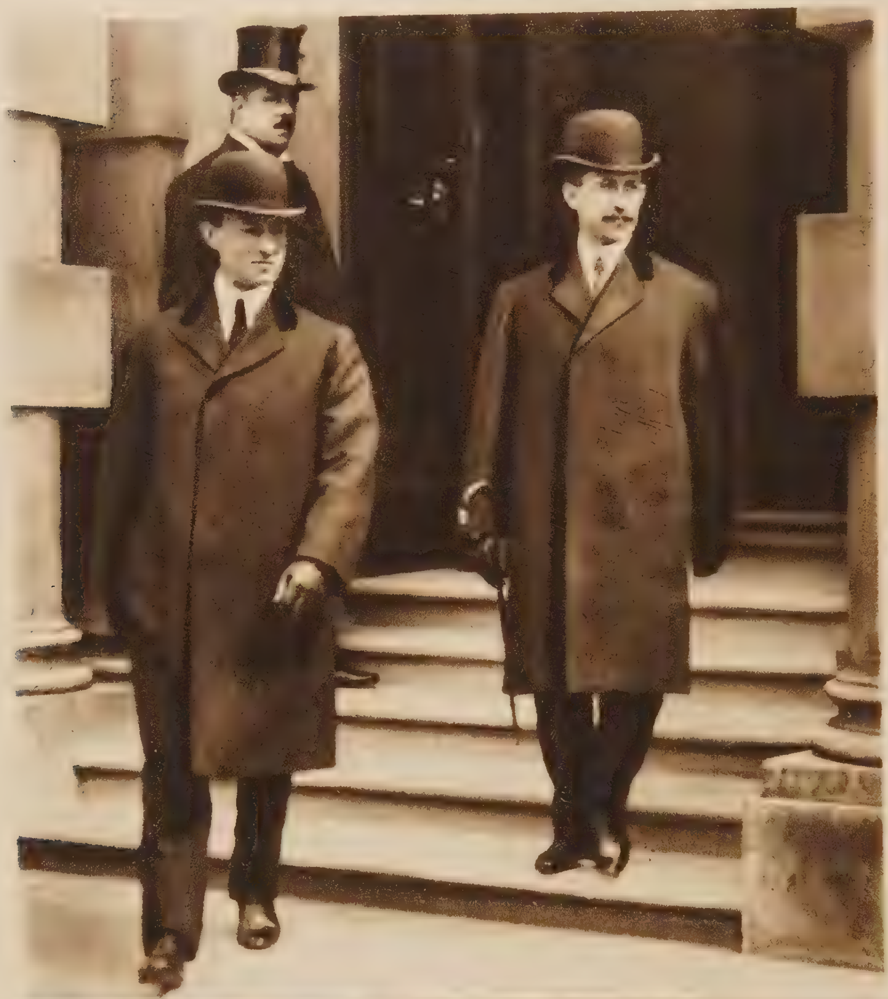
EUROPE *Produces* FIRST *Commercial* PASSENGER *Airship*—1909

TWO NOTABLE EUROPEAN DIRIGIBLES came out this year (1909). "Ville de Nancy" (below) was the first commercial dirigible airship.

"Ville de Nancy" was destined for use at the Nancy Exposition and was owned by the Compagnie Generale Transaerienne (organized March, 1909), a million-franc corporation which planned a commercial air line between Paris and Bordeaux. She was built by the Astra Company of Paris on Clement-Bayard lines and proved very popular as the first French passenger airship.

"La Belgique" was constructed early that year (1909) by Louis Godard, celebrated balloonist and aeronautical engineer, and Robert Goldschmidt, Belgian engineer and sportsman. She was first tested near Brussels (June 1909) with Godard himself as her pilot—his debut in this capacity.

Honor AMERICANS *at* WINDSOR CASTLE *in* ENGLAND—1909



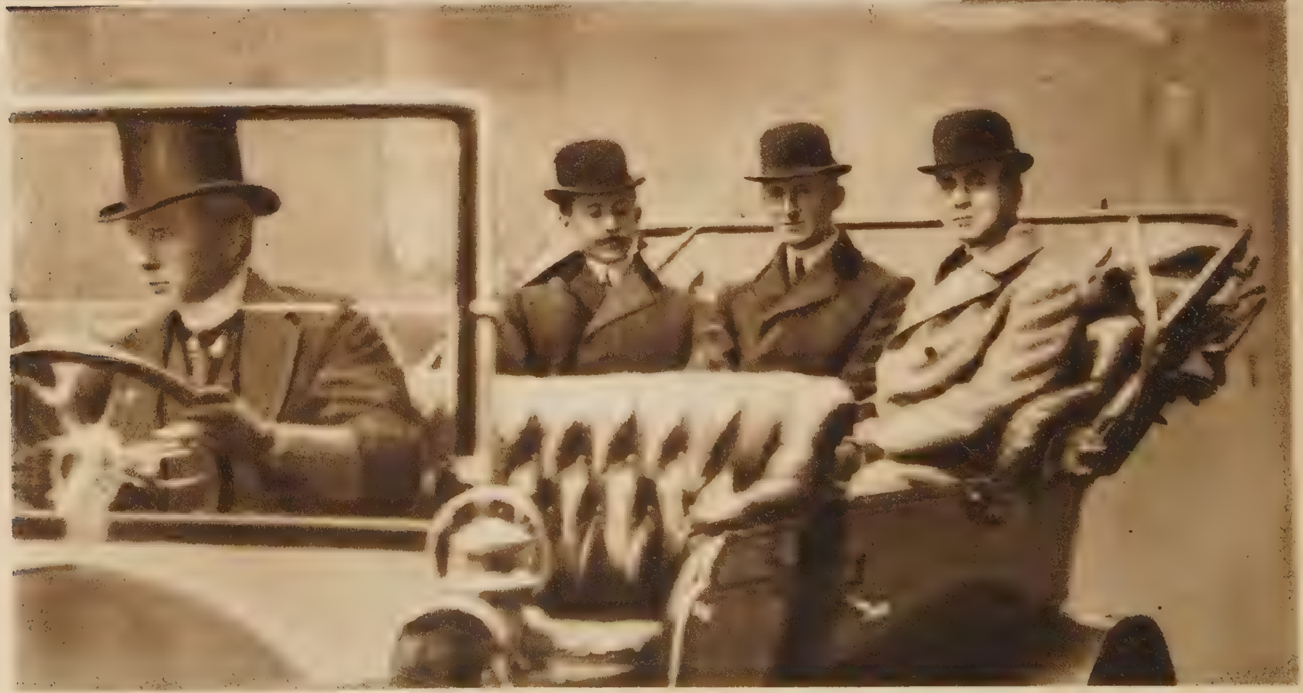
THE WRIGHT BROTHERS leaving the British War Office, where Lord Haldane was their host. Orville, Wilbur and Griffith Brewer, president of the Aeronautical Society of Great Britain, are seen (below) on their way to Windsor Castle to be received by King Edward.

The Wrights' European triumph has been complete. They have been honored by royalty and feted, as far as they would permit. Seldom have Americans been received with such acclaim in Europe. Almost as soon as he began to fly the emotional French rose to Wilbur Wright much as they were to rise to Lindbergh two decades later.

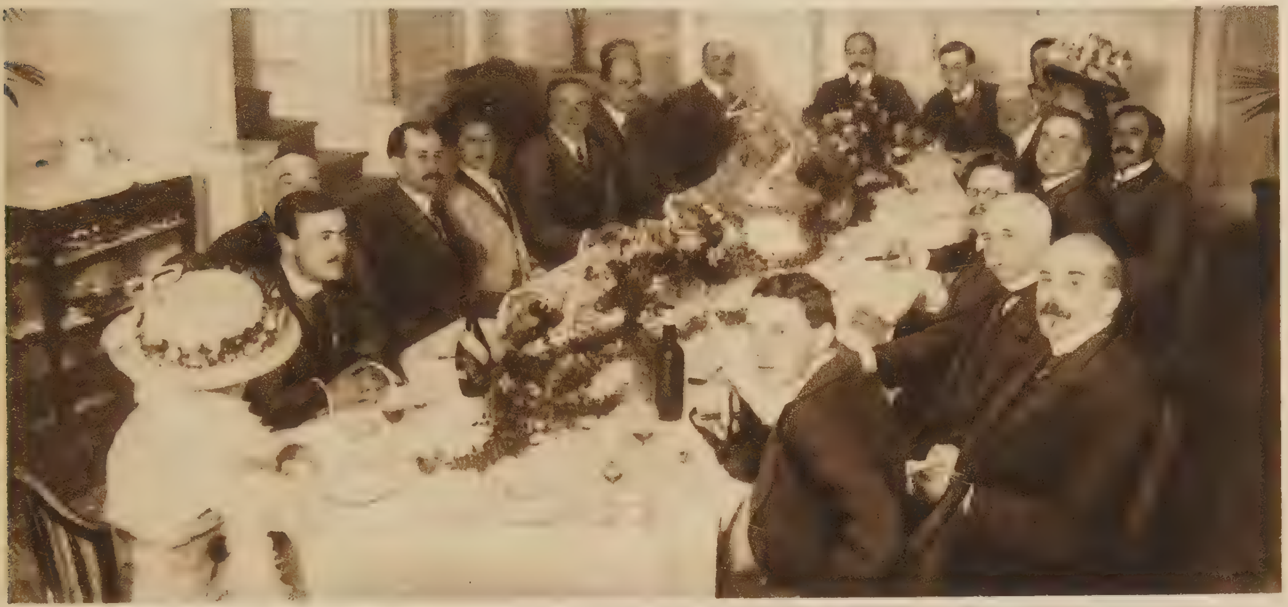
The warmth in the French hearts did much to wipe out the sting of the scepticism left behind at home and the memory of the gibes of American newspaper editors.

Now on their way home to America, via England, with their sister Katherine (May, 1909), they stop in London and are entertained by Griffith Brewer, noted aeronautical enthusiast, who had visited at Dayton and watched them fly there.

Photographs in British Government Archives and in the Brown Brothers Collection in America.

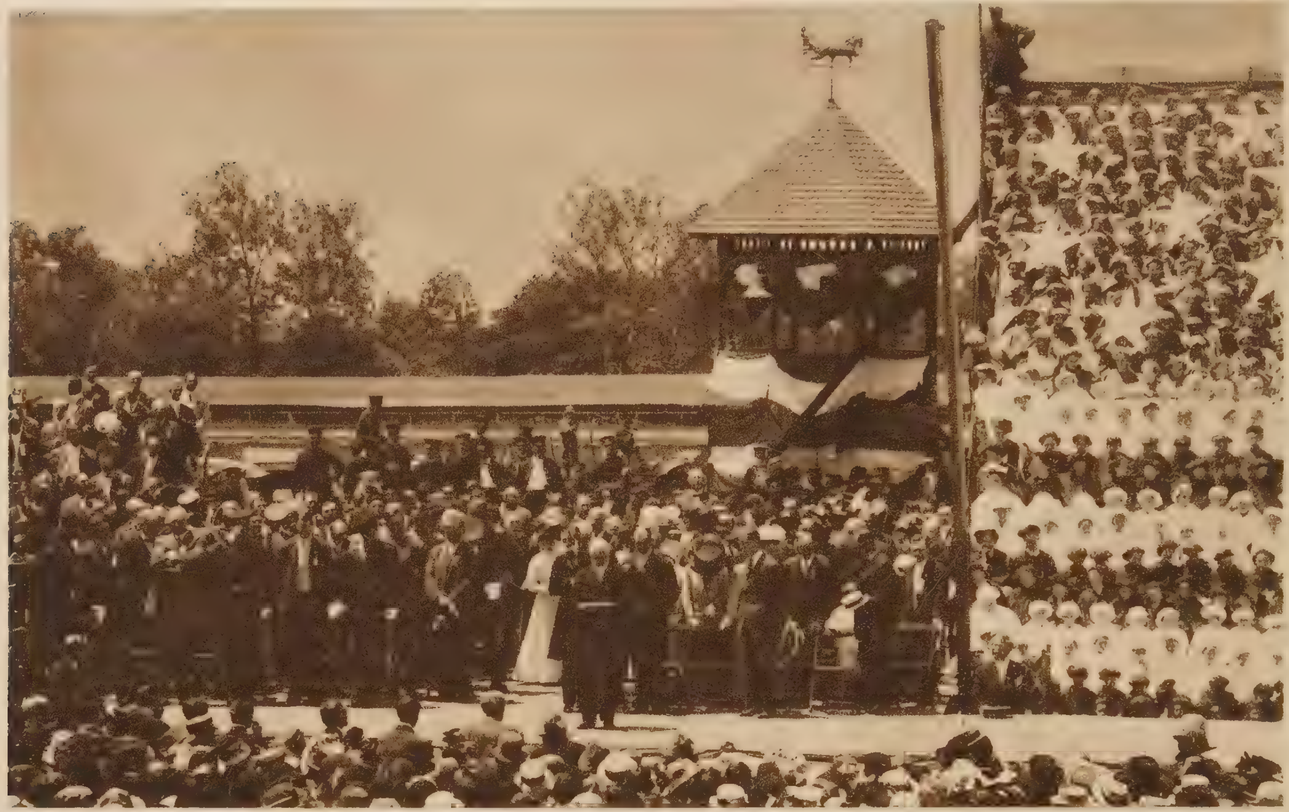


WORLD'S *Oldest Aeronautical Society Banquets* WRIGHTS—1909



ENGLAND is not to be outdone by France in recognition of the Americans who have established human flight, and the Wrights are shown every honor in London (May, 1909). The brothers are presented with the handsome gold medal of the Aeronautical Society of Great Britain, oldest aeronautical organization in the world, at a dinner in their honor. Frank Hedges Butler, founder of the Royal Aero Club of Great Britain, gave a luncheon (shown above) at which every guest had been in the air, either by balloon or aeroplane. Orville and Katherine are seated next to each other and Wilbur Wright is second from his sister's left.

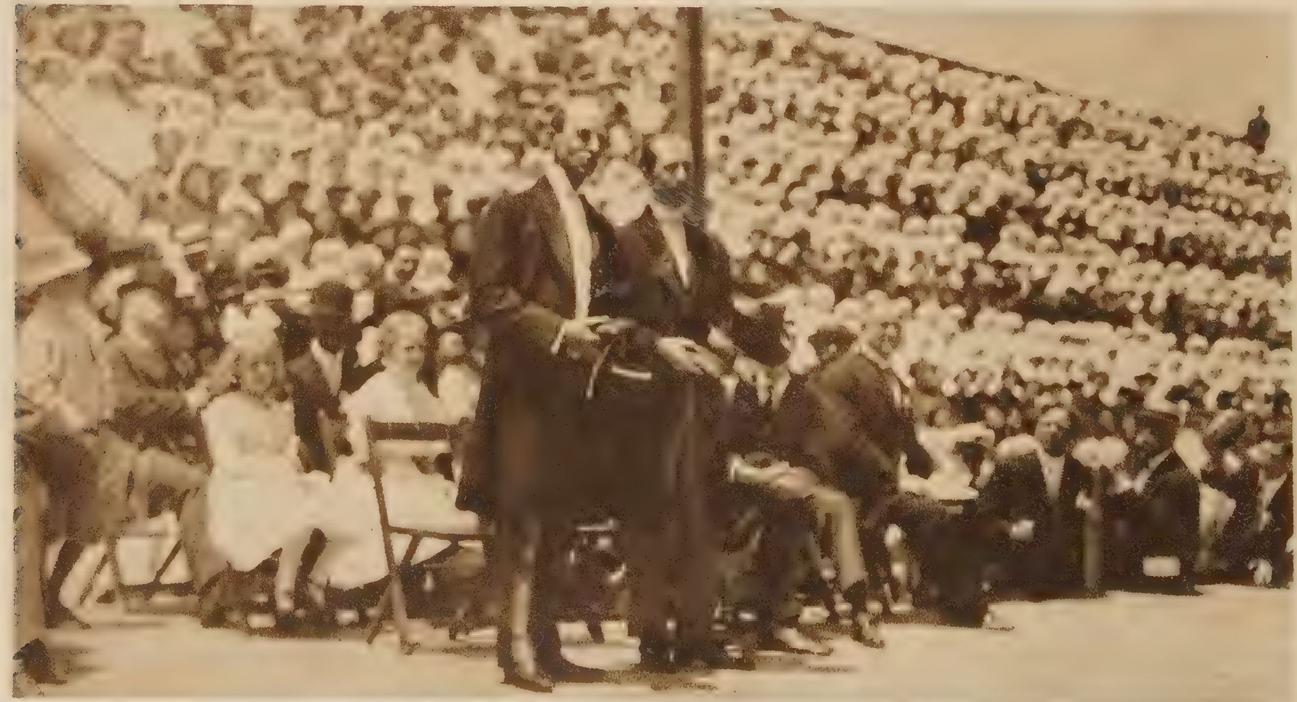
Soon the Wright party will be back home in Dayton, where fresh honors and distinctions will help to show them that at last their Ohio friends and neighbors realize the worth of the home boys who learned to fly. Photographs in Brown Brothers Collection.



BISHOP WRIGHT DELIVERS INVOCATION AT DAYTON HOMECOMING (Above)

WILBUR AND ORVILLE WRIGHT stand directly behind their father. At last their home town awakens to the epoch-making achievements of "the Wright boys."

Against the background of the human flag, formed by the school children of Dayton, the Wrights await the abatement of thunderous applause to bow their acknowledgment. Photographs in Brown Brothers Collection.



GOVERNOR JUDSON HARMON SPEAKS FOR THE STATE OF OHIO (Above)

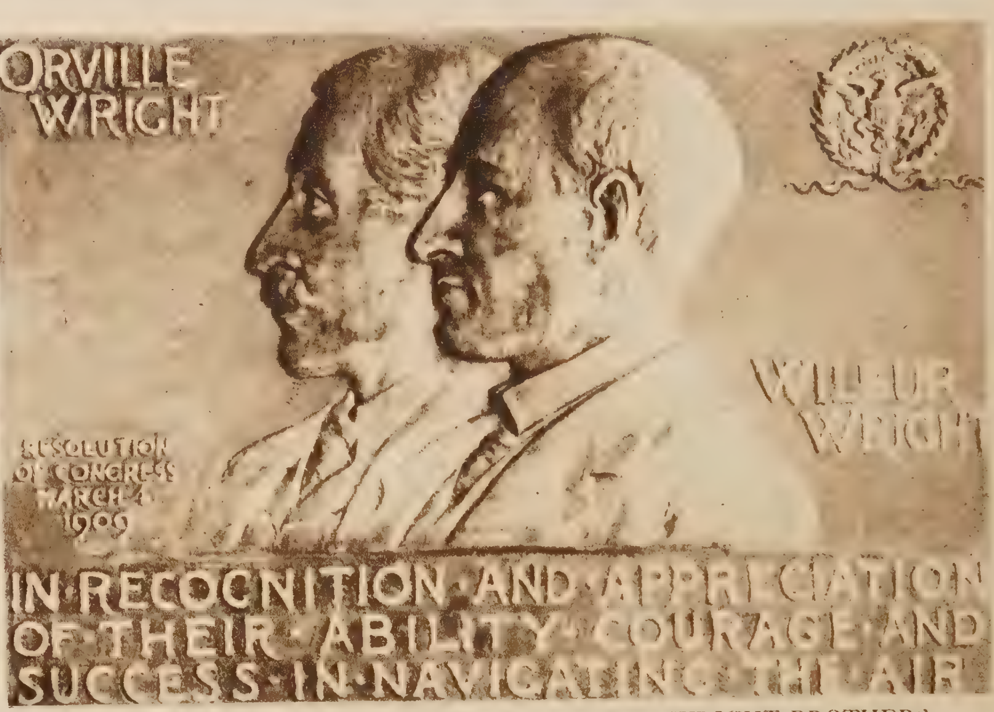
REUCHLIN AND LORIN WRIGHT, older brothers of the fliers, sit at Bishop Wright's left (above) as Governor Harmon presents the Gold Medal of the State of Ohio. The Mayor of Dayton has already presented the special medal of the home city.

Representatives of the United States Government present the Wright brothers (below) with the Medal of the United States Congress awarded by special resolution in honor of their great achievements.

AWARD *by* CONGRESS *in* HONOR *of Epochal* ACHIEVEMENT

WRIGHT BROTHERS
HOME CELEBRATION
DAYTON

MEDAL STRUCK
By City of Dayton
To Celebrate
HOMECOMING
OF WRIGHTS


ORVILLE WRIGHT
WILBUR WRIGHT
RESOLUTION OF CONGRESS MARCH 4 1909
IN RECOGNITION AND APPRECIATION OF THEIR ABILITY COURAGE AND SUCCESS IN NAVIGATING THE AIR

SPECIAL CONGRESSIONAL MEDAL AWARDED WRIGHT BROTHERS
Face of Medal (above); Back of Medal (below, left). Ernest L. Jones Collection.

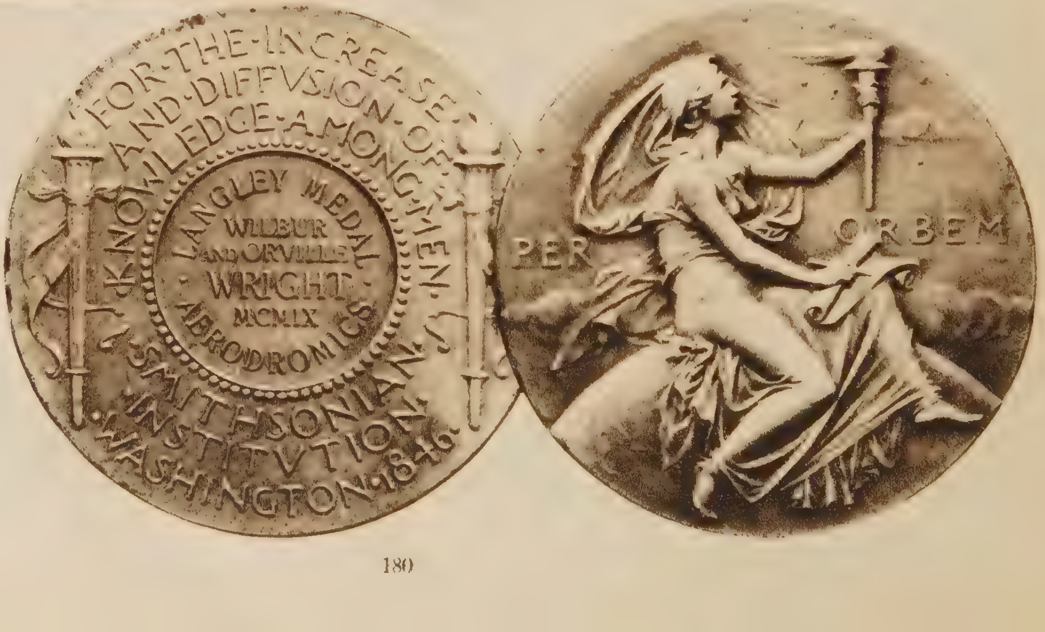
SHALL MOUNT UP WITH WINGS AS EAGLES

RECOGNITION OF THE WRIGHTS in their Homeland came with a rush upon their return to America (May 1909). France, Italy and England had honored them. America finally realized its obligations to the "discoverers of Human Flight."

"Perhaps I do this at a delayed hour," said President Taft at the White House (June 11) in presenting Wilbur and Orville Wright with the medal of the Aero Club of America, first official recognition of their achievements.

The United States Congress, by special resolution (March 4, 1909) conferred a medal on the Wrights, which was presented at their three-day Home-coming Celebration at Dayton (June 15-17), as were the medals of the State of Ohio and the City of Dayton. Later in the year the Smithsonian Institution gave the Wrights the famed Langley Medal for scientific achievement.

LANGLEY
MEDAL
(Right)
Awarded
WRIGHT
BROTHERS
By the
SMITHSONIAN
INSTITUTION


FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE AMONG MEN
LANGLEY MEDAL
WILBUR AND ORVILLE WRIGHT
MCMIX
AERODROMICS
SMITHSONIAN INSTITUTION
WASHINGTON 1846
PER ORBEM

First ATTEMPT *to Cross English* CHANNEL *in Airplane*—1909

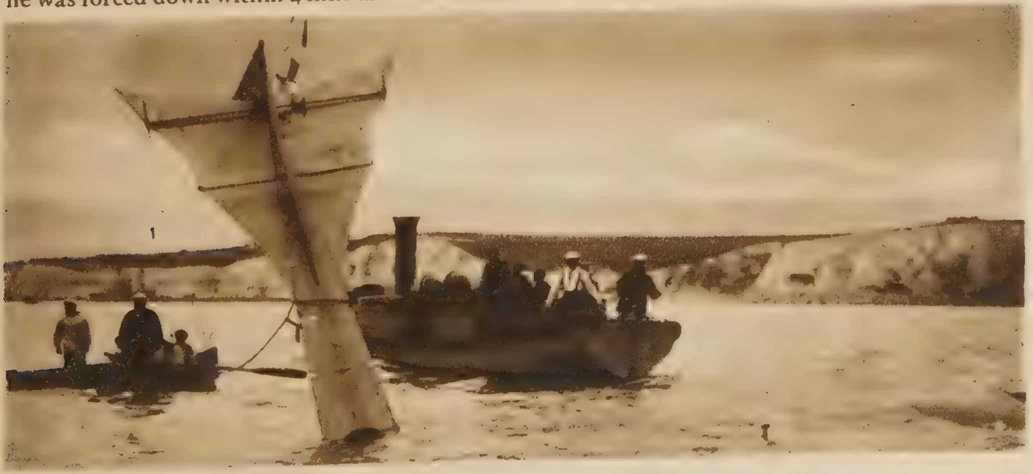
LATHAM STARTS OVER THE ENGLISH CHANNEL (Above)
Photographs in Brown Brothers and Paul Thompson Collections

THE AIRMAN DOWN SIX MILES AT SEA (Below)

LATHAM WITH CALAIS OFFICIALS
Photograph in Brown Brothers Collection

HUBERT LATHAM, English aviator who flew much in France, was the first airman to attempt to fly the English Channel from Calais, France, to Dover, England (July 19, 1909). The flying "hard luck" which seemed to pursue Latham brought him down in Channel water six miles out from the French shore. Spark failure stopped his motor. He made a clever landing on the surface of the sea. Rescuers found him afloat, coolly rolling a cigarette.

In his beautiful Antoinette monoplane, Latham, who had now been flying but two months and was soon to become the star altitude flier in Europe, again tried to fly the Channel from Calais, eight days later (July 27, 1909). This time he was forced down within a mile and a half of Dover Cliffs, again by engine failure.



LATHAM
DOWN
in
ENGLISH
CHANNEL
on
SECOND
ATTEMPT
to
Fly from
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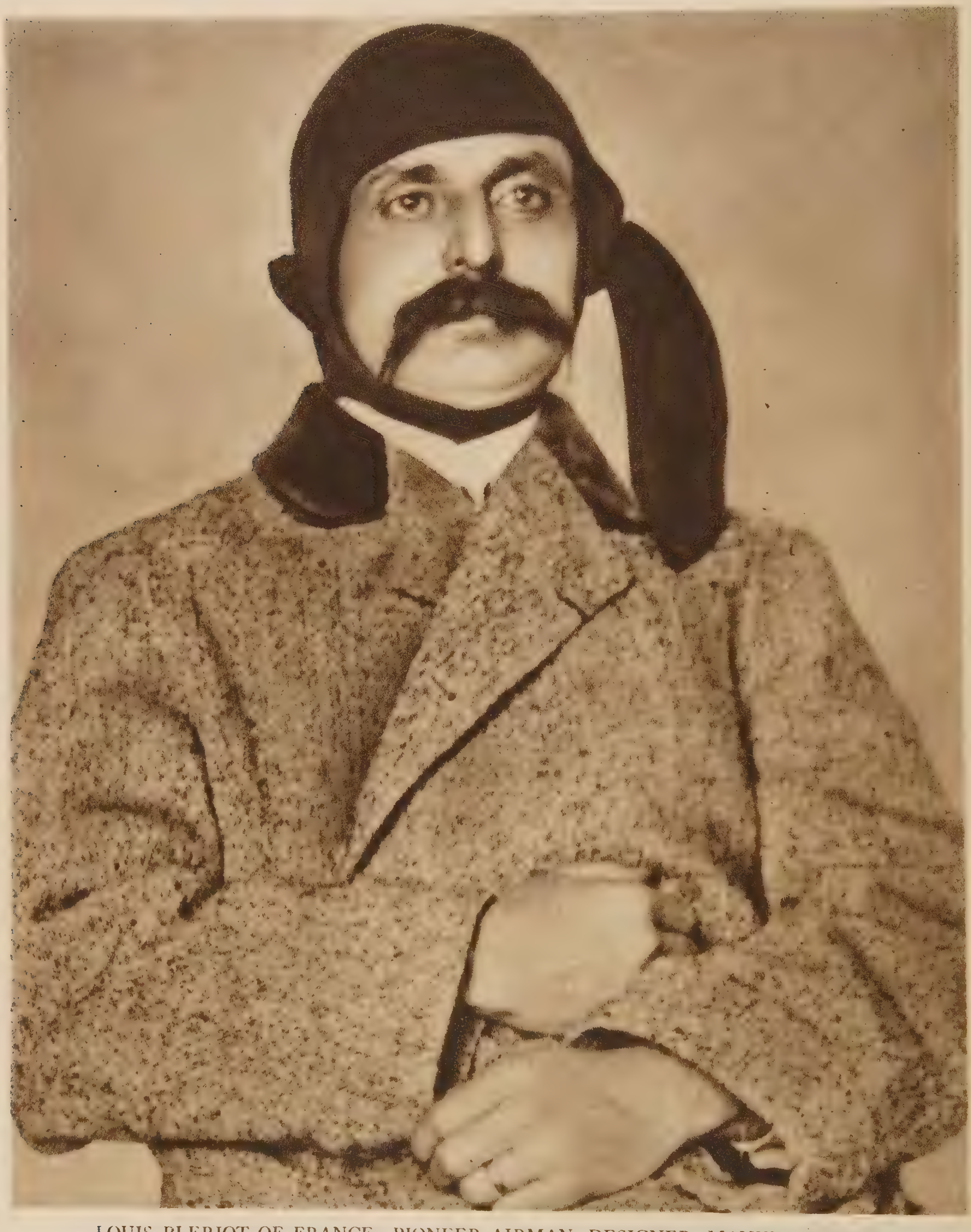
to ENGLAND



LOUIS BLERIOT OF FRANCE—PIONEER AIRMAN, DESIGNER, MANUFACTURER
Photograph in Bleriot Collection in Paris and Brown Collection in America.

PART XII

FIRST AIRPLANE FLIGHT *Between* NATIONS

BLERIOT *Crosses* ENGLISH CHANNEL—FRANCE *to* ENGLAND

FRANCE SCORES A VICTORY! The "Great Bleriot amazes the world" with the First Airplane Flight Across the English Channel (July 25, 1909). He makes the distance from Calais to Dover, 25 miles in 37 minutes. The English give the Frenchman a magnificent ovation in London.

The Wrights in America are now both at Fort Myer completing the Government tests with the First Cross-Country Airplane Flight (July 30, 1909) when Orville Wright flies to Alexandria and back, 10 miles in 14 minutes, winning the $25,000 Government contract award, with Lieut. Benjamin D. Foulois, later Brigadier-General, as passenger. President Taft and Cabinet members, army officers and members of Congress witness the achievement amid "mighty cheers and tumult of motor horns."

A great crowd gathers on the military field—the spot where Orville Wright crashed and Selfridge was killed less than a year ago. This is the first flight over rough country, forests, rocks, hills and valleys. Spectators declare it to be "murder" and predict "both men will be killed."

The First Balloon Voyage over the Alps is made by Spelterini, of Italy, (August 8, 1909). Four months after Peary has discovered the North Pole, Walter Wellman attempts it by air in the great Dirigible "America" (August 15, 1909) and fails. Wellman, a daring adventurer, makes three attempts to reach the top of the world in an airship—all meet with disaster.

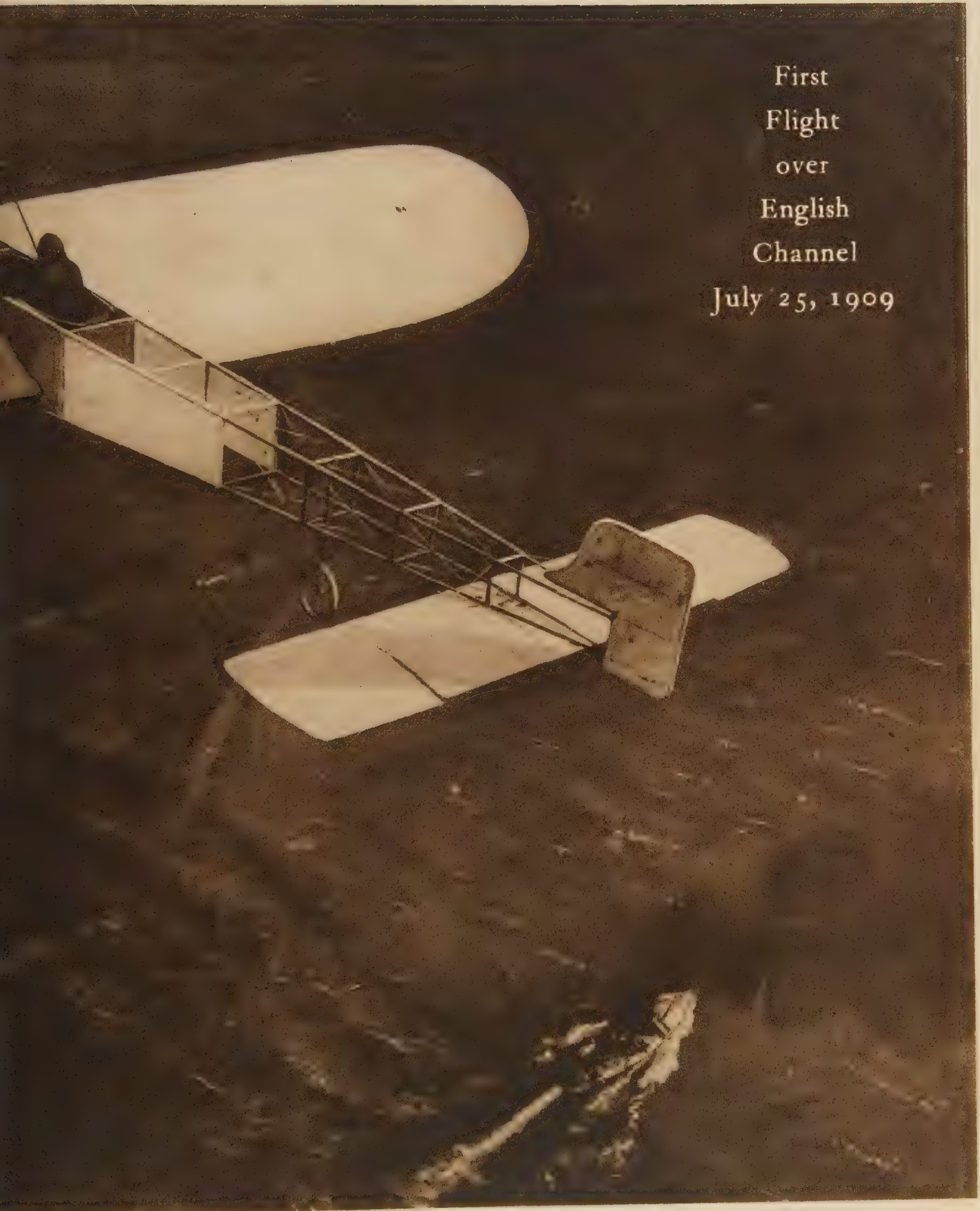
The World's First International Aviation Meet is held at Rheims, France, (August 22-29, 1909) when 32 contestants fly a total of over 45 hours, establishing new world records for distance, duration, speed, and altitude. Glenn Curtiss, representing America, wins the First James Gordon Bennett Airplane Trophy as fliers of three nations make history.

President Fallieres of France is guest of honor at the international event. Farman breaks the distance record with 118 miles in 3 hours, 14 minutes. Bleriot, "Conqueror of the Channel," and champion of France, is defeated by Curtiss—47 miles per hour—and the international trophy comes to America. We find Curtiss at Brescia, Italy, (September 8-20, 1909) where he wins the Grand Prix Race and also carries Gabriel d'Annunzio on his first flight.

The First Exhibition Flights in Canada are being given by Willard with a Curtiss airplane at the Canadian National Exhibition in Toronto (August 28-September 11, 1909); Willard attempts to fly across Lake Ontario but falls in the water.

While Curtiss is winning new honors for America in Europe, we find Orville Wright and his sister Katharine, arriving in Berlin (August 19, 1909) where they are "received as personages of the first rank and offered the imperial suite."

Europe and America are held "enthralled." Aero Clubs are being formed throughout the countries. Denver offers $10,000 "for a 20 mile flight;" New York offers $10,000 for an Airship Flight to Albany; the first Airplane advertisement appears in a magazine under caption: "Drive an Airplane;" and the First Army Aerodrome is built at College Park, Maryland.



First
Flight
over
English
Channel
July 25, 1909

MADAME BLERIOT FOLLOWS AIRMAN'S FLIGHT ON FRENCH DESTROYER (Above)
Official Photograph in the Private Collection of M. Bleriot

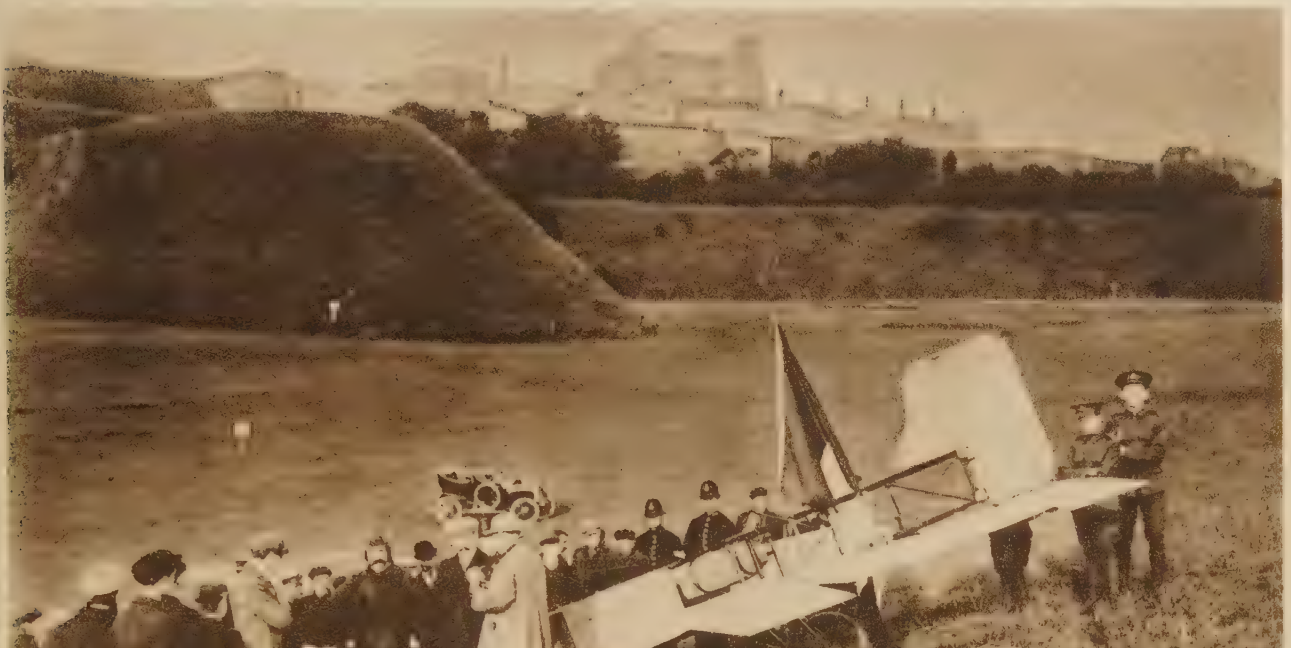
THE INTREPID BLERIOT wins world fame for France and himself in "Great Flight." He was in far from good physical condition that Sunday morning (July 25, 1909). His right foot was injured from burns in a gasoline explosion and he was on crutches. His friend, Alfred Leblanc, aroused Bleriot at his Barraques camp, near Calais, at 4 A.M. As the heroic French airman hobbled to his monoplane he remarked: "If I cannot walk, I will show the world I can fly."

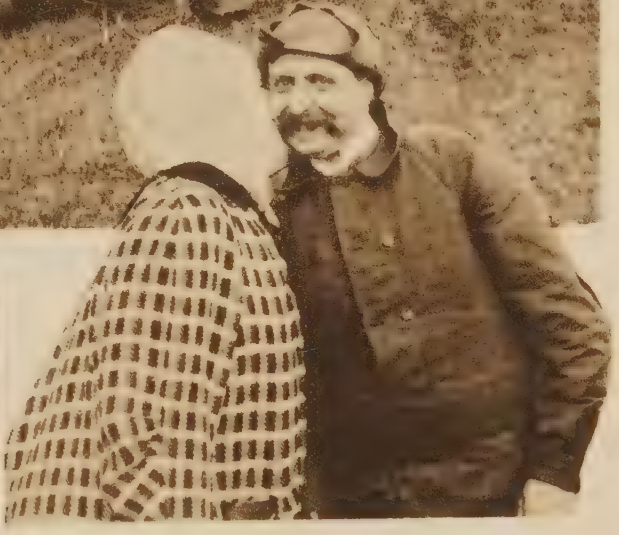
4:35 A.M.—He started, minus guide or compass. A change or wind might have driven him over the North Sea—to be lost, as Grace and Hamel both were later on. Disappearing over the center of the Channel, he was out of sight of anything but sky and sea—flying at 40 miles an hour.

Bleriot sighted the white cliffs of England ahead. Adrift on a southwest wind, he followed some boats to Dover. On the North Fall meadow atop the cliff behind Dover Castle his friend Montaine stood violently waving the French tricolor and shouting: "Bravo Bleriot! Bravo! Vive la France!"

BLERIOT ABOUT TO LAND AT DOVER AFTER CROSS-CHANNEL FLIGHT (Below)—Jones Collection.

CALAIS *to* DOVER—*25 Miles in 37 Minutes*—BLERIOT—1909





MADAME BLERIOT GREETS VICTORIOUS HUSBAND

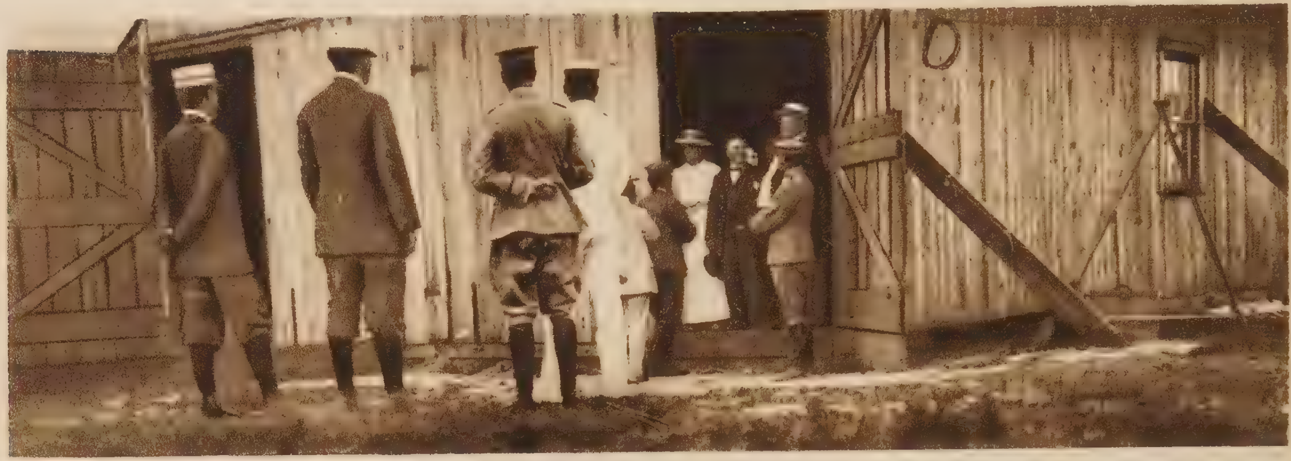
BLERIOT LANDS IN ENGLAND at 5:02 A.M. (July 25, 1909). He had flown from France to England—25 miles—in 37 minutes. Amid the peace of a British Sabbath morning, he made a tremendous sensation.

The amazed English gave the Frenchman a wonderful reception, and later erected a monument on the spot where he landed.

Bleriot's plane was taken to London by train. In the next four days 120,000 people came to view it. Photograph showing Bleriot just landed on Dover downs is in private Collection of M. Bleriot in Paris.

Madame Bleriot's hearty greeting (above) is in the Acme Collection. Portrait of Madame Bleriot (left) in Brown Brothers Collection.

WRIGHTS *Win $25,000 Prize, Breaking World's* RECORD—1909



PRESIDENT TAFT CONGRATULATES THE WRIGHT BROTHERS AT FORT MYER (Above)
Official Photograph from Archives of the Army Air Corps.

Wilbur Wright conferring with Charles Taylor (below)—Acme Collection.

WRIGHT BROTHERS are again at Fort Myer (July, 1909)—this time to win the Government's $25,000 award by completing triumphantly all the United States Army tests interrupted by the sad accident of the year before. Orville is making all the flights. Wilbur, Katherine, and Charles Taylor, their chief mechanic at Dayton, stand by.

Many tuning-up flights occur—while official Washington flocks to Fort Myer to marvel at the flying Wrights. Finally (July 27) Orville takes up Lieut. Frank P. Lahm of the Army and flies splendidly above the Fort Myer parade ground for 1 hour, 12 minutes and 40 seconds. Ten thousand spectators on the ground below thrill to each graceful evolution of the great man-made bird. Thus the duration test is more than met.

Orville scores victoriously in fulfilling the distance flight with passenger three days later (July 30). In the dusk of evening he takes aboard Lieut. Benjamin D. Foulois (now General Foulois, Assistant Chief of the Army Air Corps) and sails away over hill and dale for Alexandria, where a captive balloon floats over Shuter's Hill.

As they disappear over the trees, Wilbur stands, watch in hand. The tension on the whole Wright party is great. Soon the plane reappears and is brought to earth in safety, having flown 10 miles in 14 minutes—at 42.6 miles an hour. The extra speed earns the Wrights a bonus of $5,000 over the $25,000 price to be paid by the United States Government. President Taft congratulates the Wrights on the spot.

Orville Wright with Katherine Wright and friend (below)—Acme Collection.

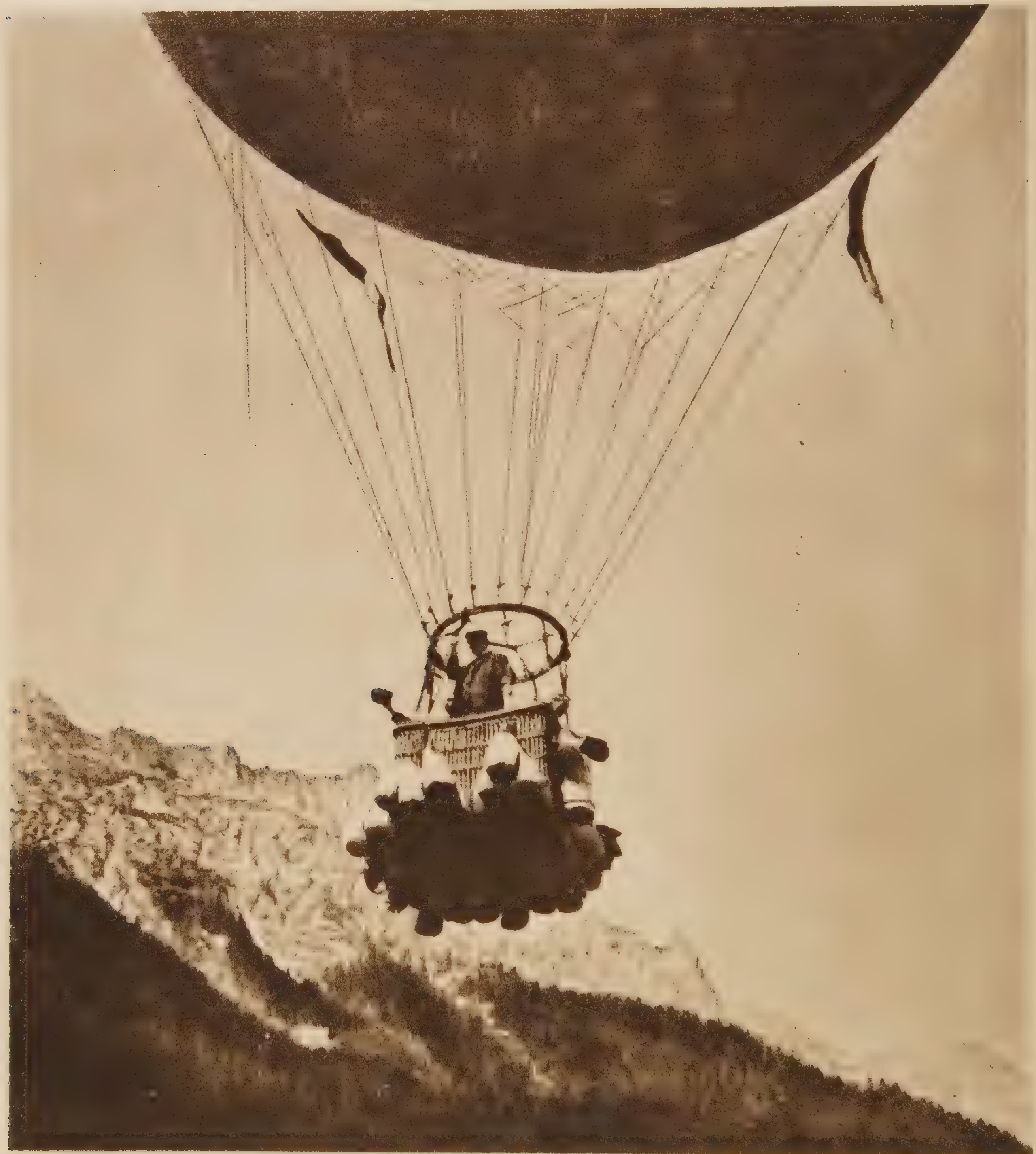
GOVERNMENT *Officials* WITNESS TRIALS *at Fort* MYER

CABINET OFFICERS—SENATORS—Congressmen—Government Officials—many ladies and children—Government employees—all these and more from Washington rubbed elbows with distinguished folk from all over the United States and, in fact, from all over the world, at the Fort Myer Army Post while the Wright brothers were finally "selling" the Wright plane to their own Government (July, 1909).

We find "Uncle Joe" Cannon, Speaker of the House of Representatives (left)—and "Charlie" Taft (Charles P. Taft, Jr.) (center), youngest son of President Taft. Photographs in the Underwood and Underwood Collection. Lieut. Benjamin D. Foulois (right) is about to fly with Orville Wright. Photograph in the Government Archives and in the Paul Thompson Collection.

"UNCLE JOE" CANNON GREETS THE WRIGHTS

First AIR VOYAGE *Over* MT. BLANC *in the* ALPS—1909

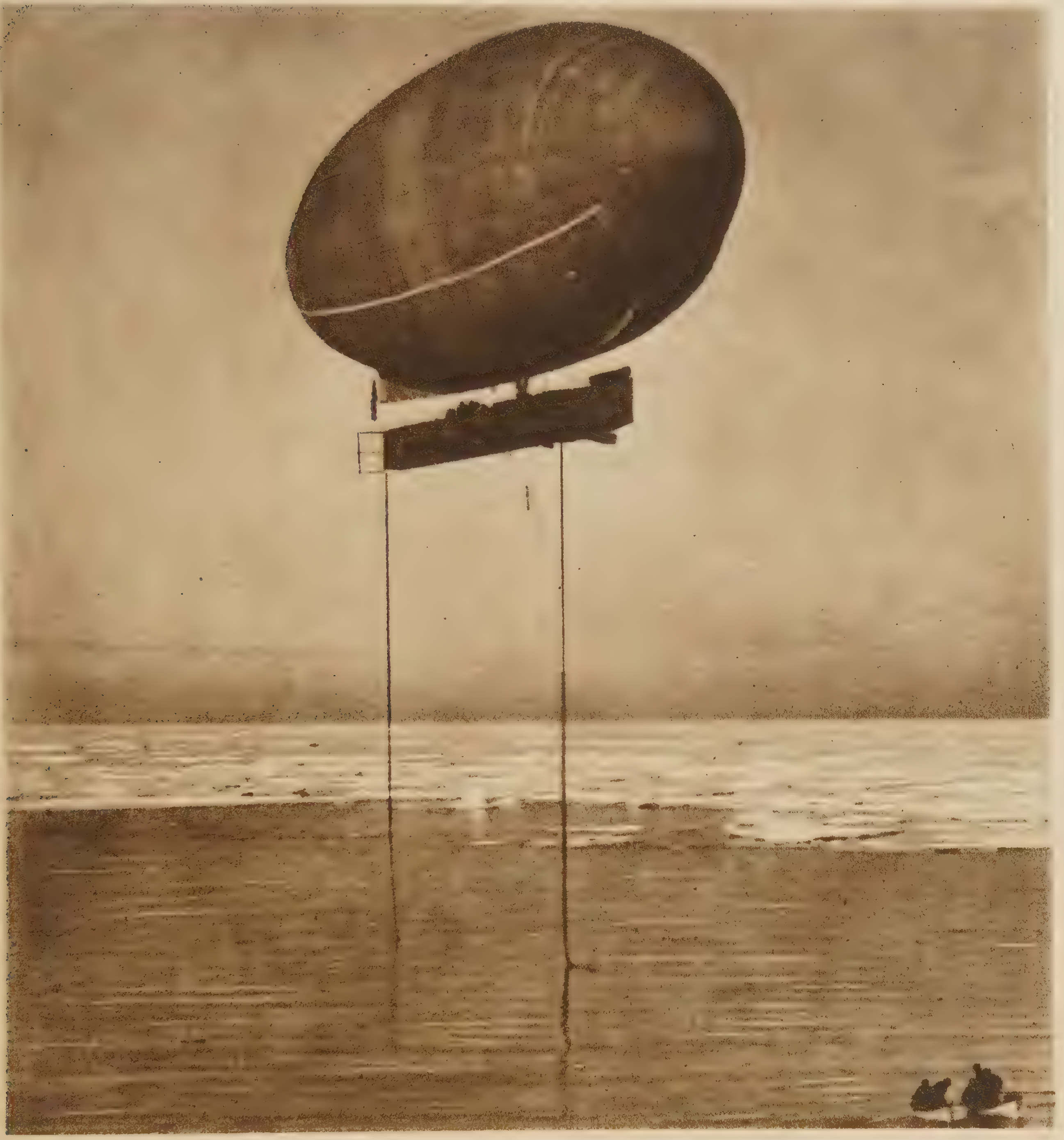


SWISS AVIATOR CROSSING LOFTIEST PEAKS OF THE ALPS OVER MT. BLANC TO LAKE MAGGIORE
Historic Print in the Archives of the Government of Switzerland

MONSIEUR E. SPELTERINI, noted Swiss aeronaut, with three friends made a voyage in the great balloon "Sirius," from Chamounix, Switzerland, over Mt. Blanc—15,782 feet—to Lake Maggiore in northern Italy (August 8, 1909).

M. Spelterini's balloon companions were the Comte de Chateaubriand, M. Duncker and M. Frantz-Reichel, the last a member of the staff of the Paris *Figaro*. These gentlemen traveled through the air a distance of 93 miles in seven hours. The maximum altitude attained by their balloons was 18,700 feet, about three and one-half miles.

First ATTEMPT *to Reach* NORTH POLE *in* AIRSHIP—1909



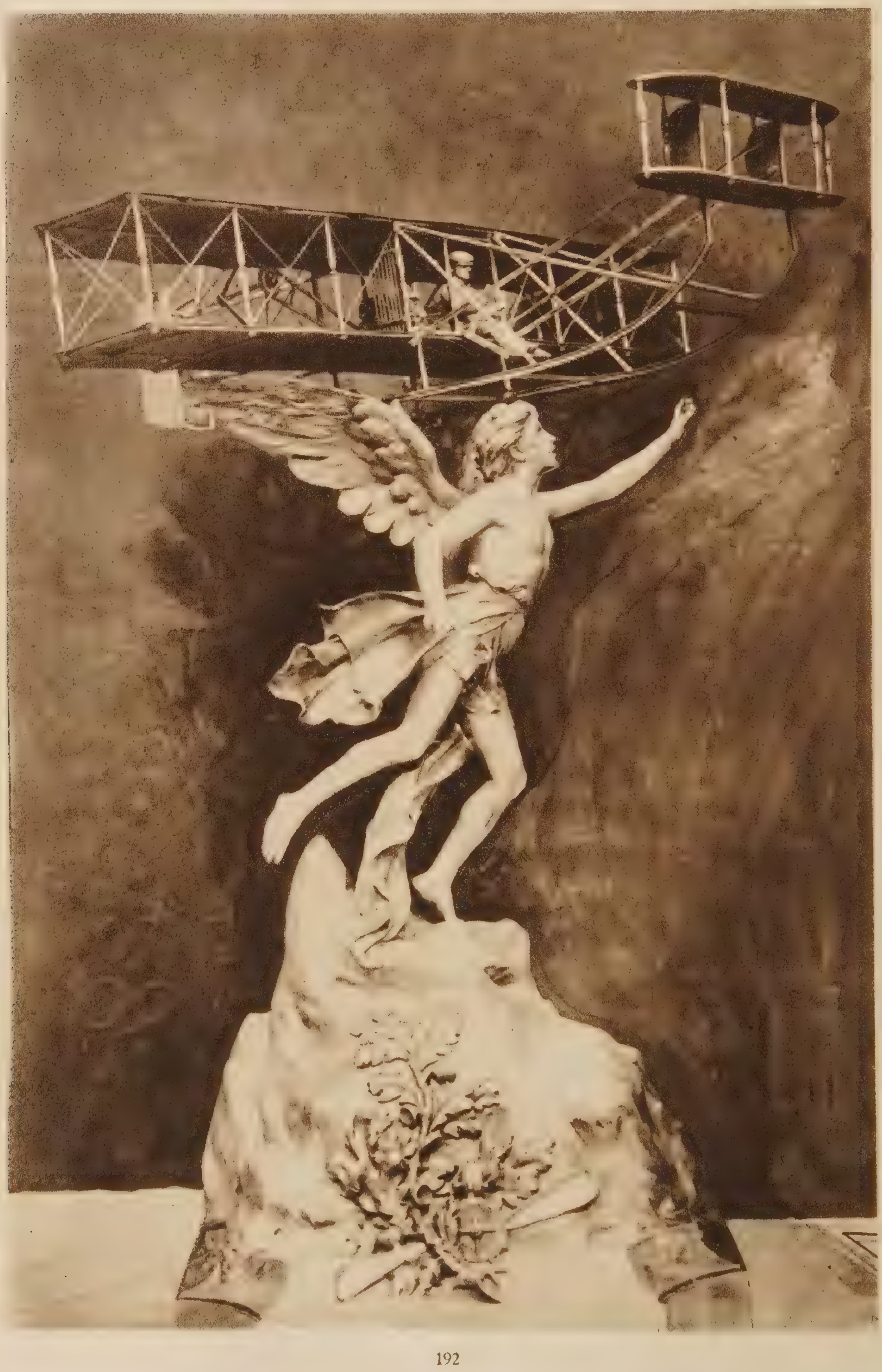
MISFORTUNE OVERTAKES WELLMAN ON FIRST AIRSHIP ATTEMPT FOR TOP OF WORLD

WALTER WELLMAN, American journalist, made the first attempt to reach the North Pole by airship (August 15, 1909)—only to meet with complete failure through a minor accident. In the great dirigible "America" he set out from Spitzbergen, Norway, with four companions to fly to the Pole, after extensive preparations.

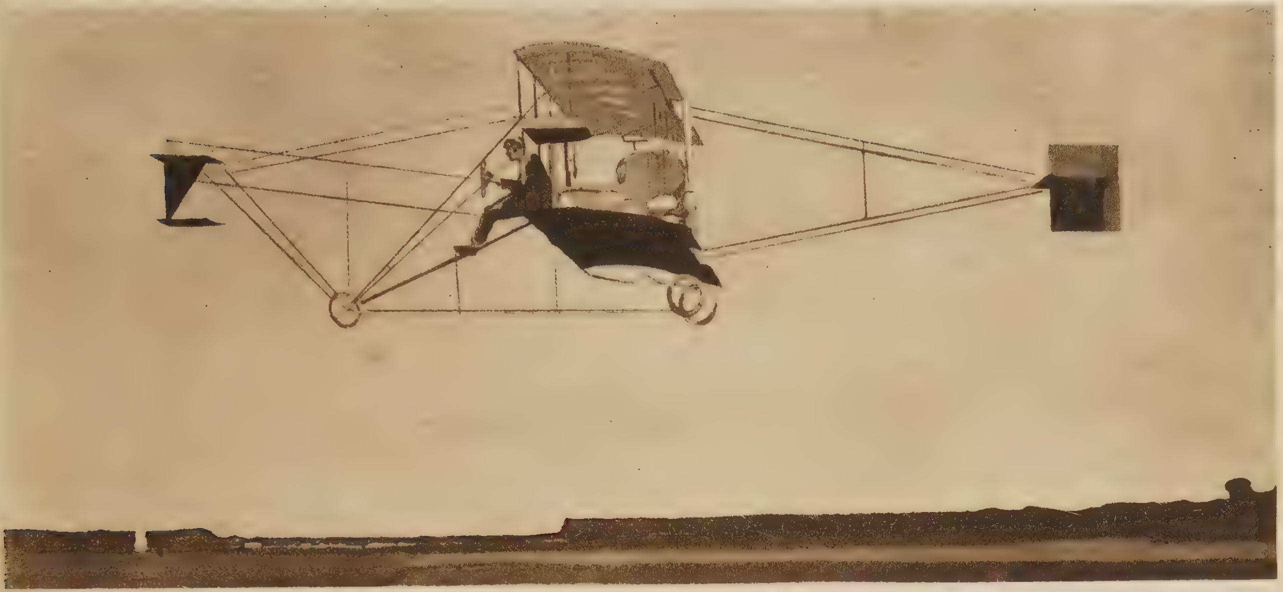
They were but 40 miles on their northward way when their leather drag rope broke. The airship became unmanageable, shot up into the clouds, and finally landed on the surface of the sea. They were towed back to Spitzbergen by a German whaler. This was Wellman's second attempt to go to the Pole by air, the first (1907) having ended in similar failure in a violent snowstorm.

Meantime it developed that Peary had gone to the North Pole by dog-sled (April 1909). Wellman transferred his attention to a transatlantic airship voyage, as we shall see later (1910). Photograph of the "America" and her rescue party from the German ship, in the Brown Brothers Collection.

First INTERNATIONAL *Air Award—Gordon Bennett Trophy*—1909



WORLD'S *First* AVIATION MEET *at* RHEIMS, *France*—1909

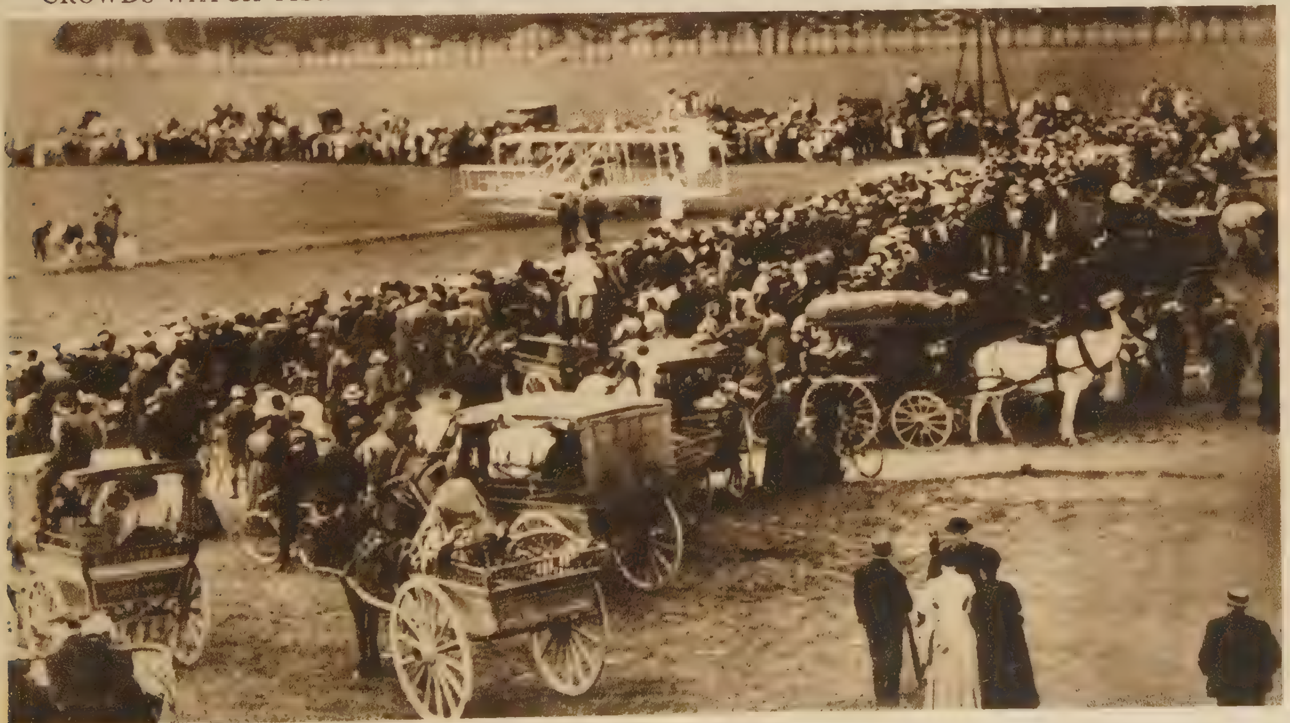


GLENN CURTISS AT RHEIMS WINNING THE GORDON BENNETT TROPHY (Above)
French water color by Gamy in the Bella C. Landauer Collection.

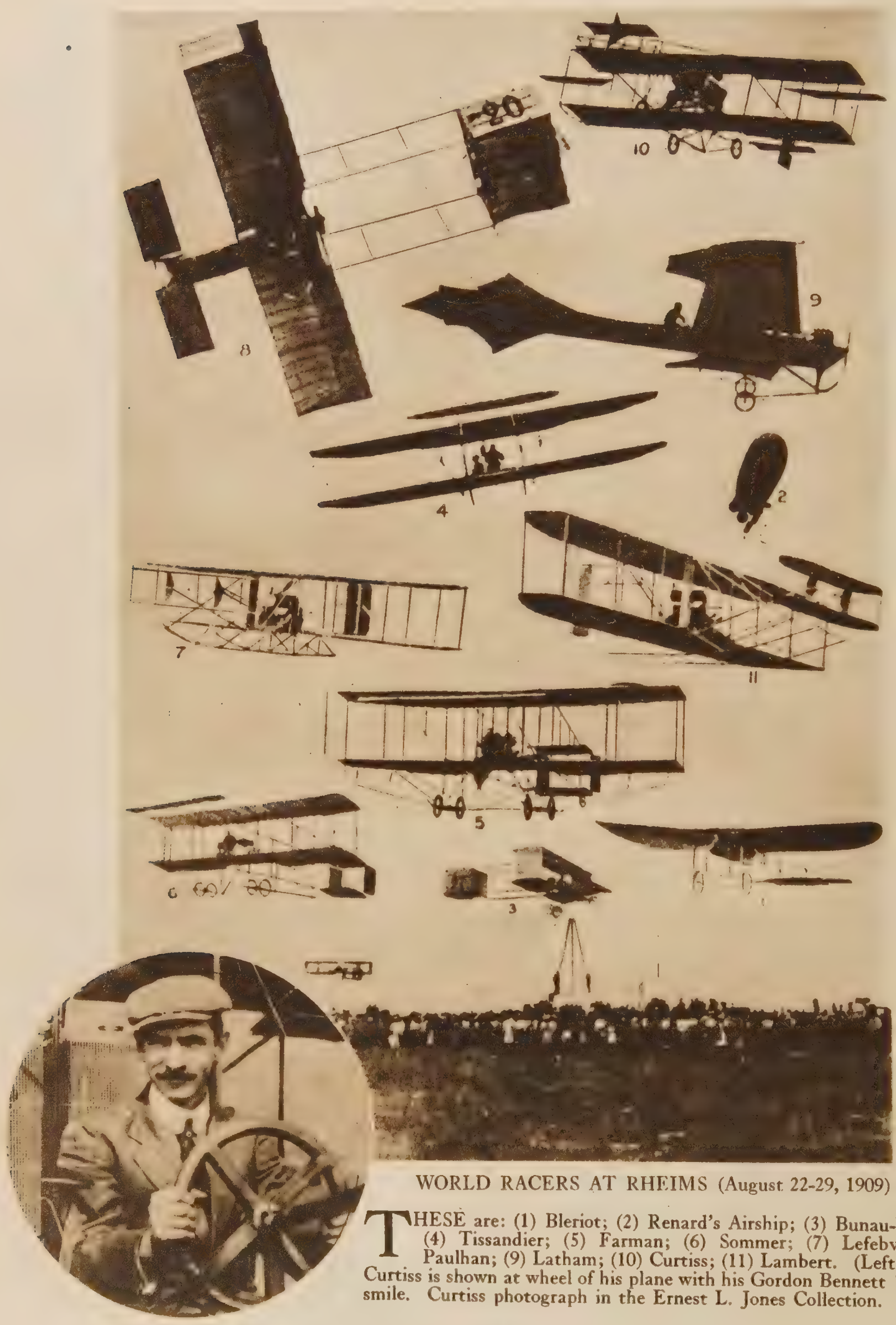
WORLD'S FIRST AIRPLANE RACES took place at Rheims, France (week beginning August 22, 1909), five and a half years after the first flight by the Wrights. This epoch-making event brought together thirty American French and English fliers to compete for $37,000 in prizes—Glenn Curtiss, the only American entrant; Cockburn, lone English competitor; Tissandier, Comte de Lambert and Lefebvre in Wright planes; Farman, Bleriot, Paulhan, Latham, Captain Ferber (always flying as "De Rue"), Delagrange, Guffroy, Sommer, Bunau-Varilla, Fournier and others. The great international assemblage included M. Fallieres, President of France.

Curtiss won the grand prize of the meet, the James Gordon Bennett Trophy (See Page 192) for the fastest time over a 20-kilometer course. His time was 15 minutes, 50.6 seconds. Bleriot was a close second, his time but 5.6 seconds slower. Farman broke the world's record in the Grand Prix de Champagne, 10 kilometers in 10 minutes, 39 seconds.

CROWDS WATCH TISSANDIER IN WRIGHT PLANE ON STARTING RAIL (Below) Brown Collection



FAMOUS FLIERS *of Three* NATIONS *at First Air Tourney*—1909



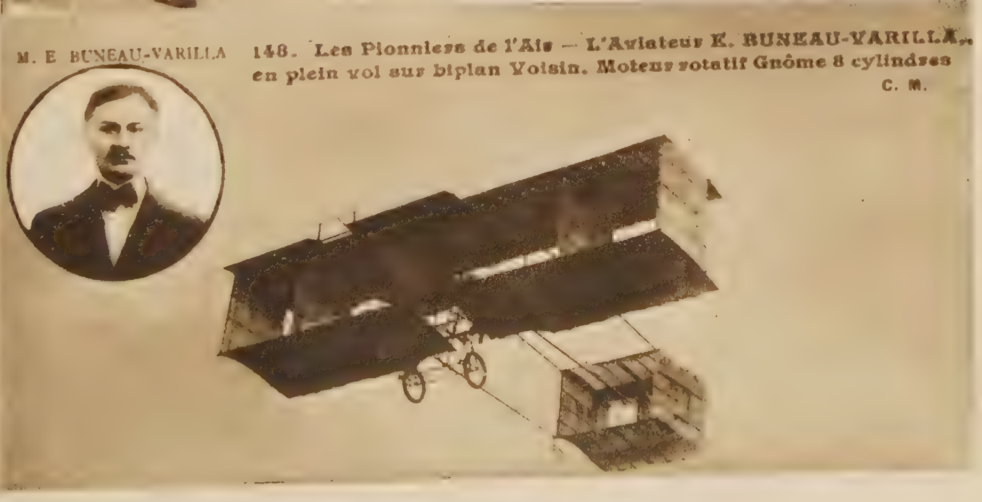
WORLD RACERS AT RHEIMS (August 22-29, 1909)

THESE are: (1) Bleriot; (2) Renard's Airship; (3) Bunau-Varilla; (4) Tissandier; (5) Farman; (6) Sommer; (7) Lefebvre; (8) Paulhan; (9) Latham; (10) Curtiss; (11) Lambert. (Left) Glenn Curtiss is shown at wheel of his plane with his Gordon Bennett Trophy smile. Curtiss photograph in the Ernest L. Jones Collection.

Great FRENCH "*Pioniers de l'*AIR" *Who Made* HISTORY—1909

THE VOISINS (above)—GABRIEL (left) and HENRI. (Below, left) PAULHAN; (below, right) FARMAN. Photographs in Brown Brothers Collection.

LEFEBVRE (Above)—Photograph in Paul Thompson Collection. BUNAU-VARILLA (Below)—Photograph in Jones Collection of United States Army Air Corps.

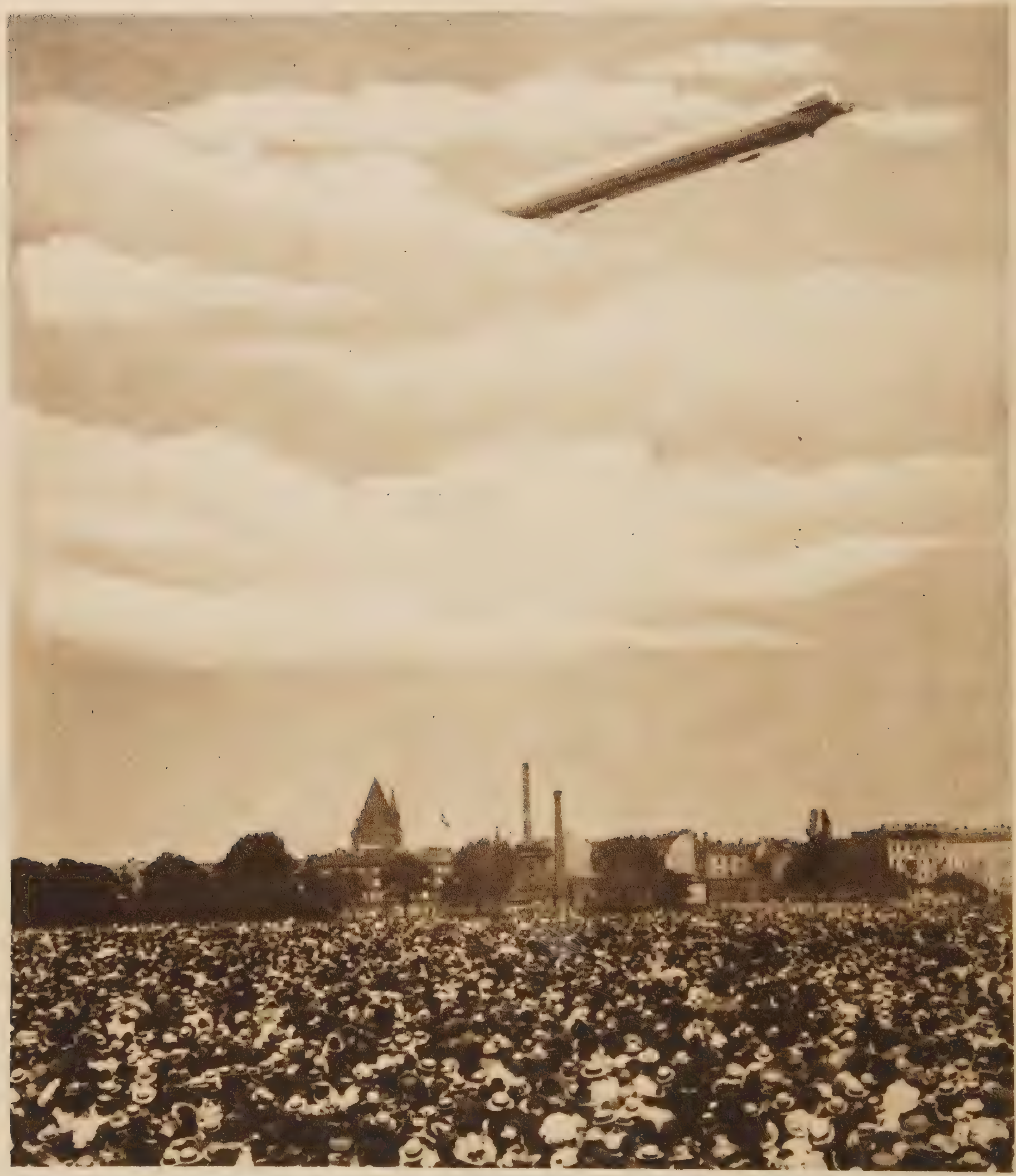


M. E BUNEAU-VARILLA

148. Les Pionniers de l'Air — L'Aviateur E. BUNEAU-VARILLA, en plein vol sur biplan Voisin. Moteur rotatif Gnôme 8 cylindres

C. M.

Count ZEPPELIN'S *First* AIR VOYAGE *Over* BERLIN—1909



AT LAST THE ZEPPELIN COMES TO BERLIN! A hundred thousand people are massed at Templehofer Field on that Sunday noon (August 29, 1909) when the gleaming bulk of Count Zeppelin's mighty aerial craft noses its way over the city out of the southern heavens. The German capital's two millions blacken the housetops and crowd the streets and parks, as the huge airship sails majestically overhead.

It is now 12:30, and thousands are returning from church; while other tens of thousands have been on the alert since daybreak for the first glimpse of the Zeppelin III. Throughout the city, church bells peal out the popular rejoicing. Photograph in Government Archives in Germany and in the Brown Brothers Collection in America.

PART XIII

FAMOUS FLIGHTS *of the* FIRST DECADE

CELEBRATIONS *in* BERLIN—PARIS—LONDON—NEW YORK

FOUR RIVAL NATIONS unite in extending honors to their "Crusaders of the Air" (1909). Germany and America clasp hands in Berlin when Count Zeppelin and Orville Wright meet for the first time before cheering throngs.

Count Zeppelin's "First Air Voyage over Berlin" (August 29, 1909) is a memorable day in the annals of the German people; twenty years more and the Zeppelin will be developed into a "Leviathan of the Clouds" on its voyage around the world.

We now find Orville Wright making his first flight in the airship as the guest of Count Zeppelin—from Frankfort to Mannheim. His demonstrations of the airplane, rival of the airship, meet with tremendous ovations at Tempelhofer Field. Emperor Wilhelm II, the Empress, and the Crown Prince witness the flights and extend royal greetings. Orville Wright and his sister, Katharine, are escorted through the streets of Berlin by Uhlans and clattering cavalry as the crowds "almost kill the American inventor with pressing homage." The Crown Prince makes his first flight in an airplane with Orville Wright (October 2, 1909).

In America the Hudson-Fulton Celebration—in observance of the 300th Anniversary of the discovery of the Hudson River and the 100th Anniversary of the invention of the steamship—is witnessing "sensational exploits in the air." Wilbur Wright makes the First Flight around the Statue of Liberty (September 29, 1909); he flies from Governor's Island to Grant's Tomb and return, a distance of 20 miles in 33 minutes, 33 seconds, "a startling achievement" (October 4, 1909).

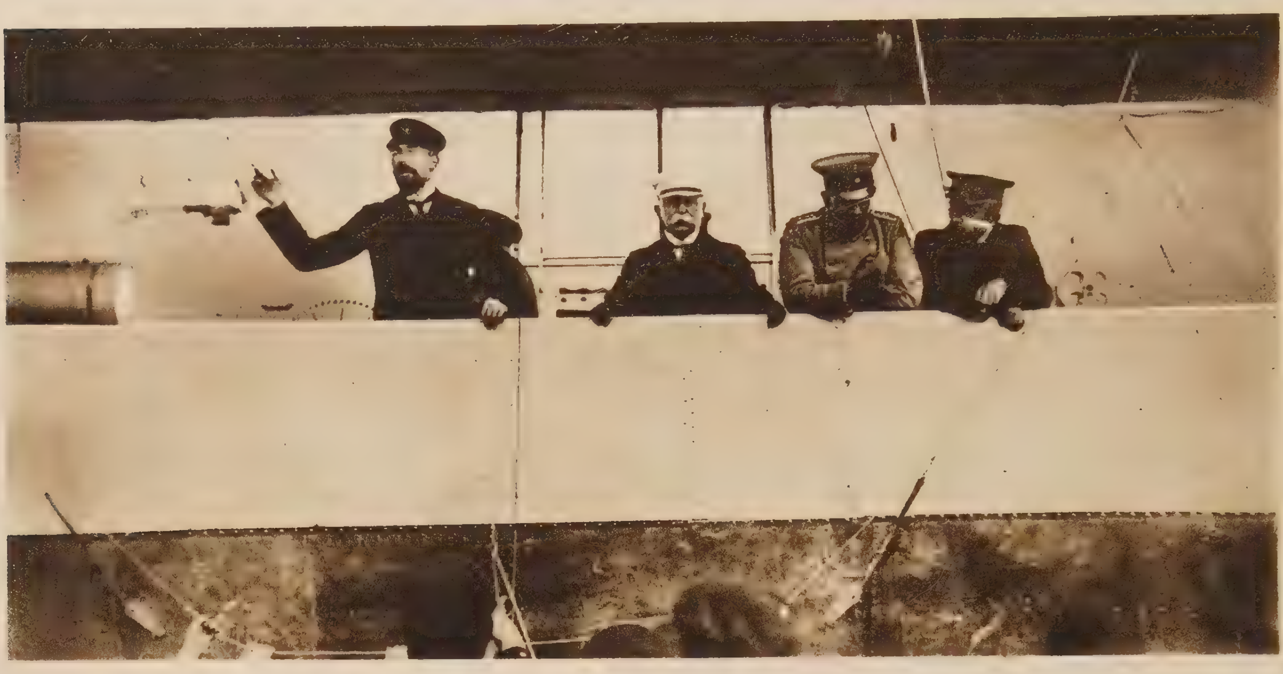
Returning from his triumphs in Italy, Glenn Curtiss engages in exhibition flights throughout the United States; his "exhibition company flies in hundreds of cities all over the country and in Mexico and South America" during the next few years. Orville Wright concludes his flights in Germany (October 15, 1909) and returns to America where the brothers also organize an "exhibition company."

France sets a new record as Santos-Dumont "astonishes the world by flying at the utterly unprecedented speed of 55 miles an hour." Count de Lambert, in a Wright plane, flies over the City of Paris and circles Eiffel Tower (October 18, 1909), rising to the "startling altitude of 1,300 feet."

Great Britain holds its First Aviation Meet (October 15, 1909); the First German Airplane is built and flown near Potsdam (November, 1909). The Wrights, with their syndicates formed in France and Germany, incorporate in America with a capital of $1,000,000 (November 22, 1909). The First Woman Aviator to make a "One Hour Flight" wins the Coupe Femina in Paris (December 15, 1909); Delagrange meets death in an airplane crash at Bordeaux (January 4, 1910).

America and France compete in the First Great Aviation Meet at Los Angeles (January 10–20, 1910); Paulhan, the Frenchman, breaks World's Altitude Record by rising to 4,165 feet. The First Great Air Epic—France versus England—from London to Manchester, 183 miles, is won by Paulhan, the Frenchman, against Grahame-White for England (April 27–28, 1910); Lord Northcliffe presents $50,000 in gold to the victor.

Historic FLIGHT *Over the* GERMAN CAPITAL—*Zeppelin*—1909

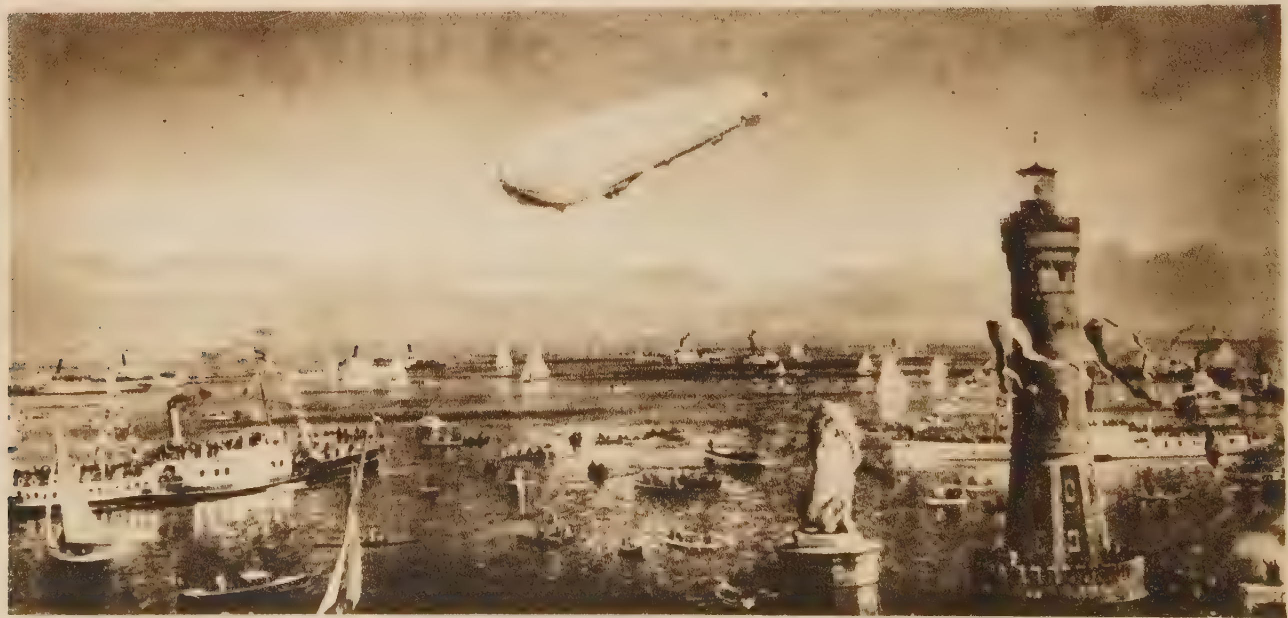


THE GREAT ZEPPELIN LEAVES FRIEDRICHSHAFEN WITH ECKENER IN COMMAND
Photographs in Government Archives in Berlin and the Paul Thompson Collection in America.

COUNT ZEPPELIN'S DAY OF TRIUMPH comes when the great rigid dirigible airship he has created is finally ready to be flown to Berlin, the nation's capital. Zeppelin III of the German Government's military series, in reality Count Zeppelin's sixth airship, rises grandly over Lake Constance amid tremendous enthusiasm (August 27, 1909) and two days later (August 29) her white-haired constructor steps out to greet his Emperor at Templehofer Field. His reception is overwhelming with its "Hoch!" Mighty cheers of a vast throng rise.

This Zeppelin III is a new ship. Her initial flight occurs but two days before she starts for Berlin, but her maker is too sure of her qualities to feel any misgivings. Motor and propeller trouble compel the ship to land more than once enroute to Berlin, but she wins through. From this moment Ferdinand von Zeppelin, already a popular figure in his native land, is *the* hero of all Germany. In the photograph (above) Count Zeppelin wears a white cap.

GALA SCENE AS THE HUGE AIRSHIP RISES OVER LAKE CONSTANCE (Below)—Landauer Collection



KAISER *Decorates* ZEPPELIN—*German Government Records*—1909

EMPEROR RECEIVES COUNT ZEPPELIN WITH GREAT CORDIALITY—Paul Thomson Collection.

WILHELM II, EMPEROR OF GERMANY, as he was then, (1909) attended by his entire suite, was at the flying field to greet Count Zeppelin with marked cordiality as he stepped from his airship. The Count saluted and, cap in hand, stepped before his liege lord to receive the royal accolade. Already the Kaiser had visited Zeppelin at Friedrichshafen, where he had decorated their constructor with the Order of the Black Eagle.

Now in Berlin, after Count Zeppelin had been presented to the royal suite, the Emperor took him into his personal car and they drove together to the Palace, where the venerable airship builder spent the remainder of the day. Shortly after midnight, he and his airship officers and crew sailed away in the re-provisioned ship for Friedrichshafen, where they arrived, after a series of mishaps and delays, a week later. Crowning Count Zeppelin's success came the announcement that the German Navy had ordered four large Zeppelins—and the passenger Zeppelin was soon to appear.

THE AIRSHIP INVENTOR AND HIS EMPEROR LEAVE IN THE ROYAL CAR (Below)

Orville WRIGHT *Greeted by the* EMPEROR *of* GERMANY—1909

ORVILLE WRIGHT IN GERMANY introduces the airplane to the German nation (August-October, 1909). He breaks records over Berlin, instructs the first German pilots, is presented to the Kaiser and Kaiserin and gives the German Crown Prince his first airplane flight. Teutons who had scoffed at a heavier-than-air flying machine, two years before, now receive one of the brothers who invented the airplane as almost a superman.

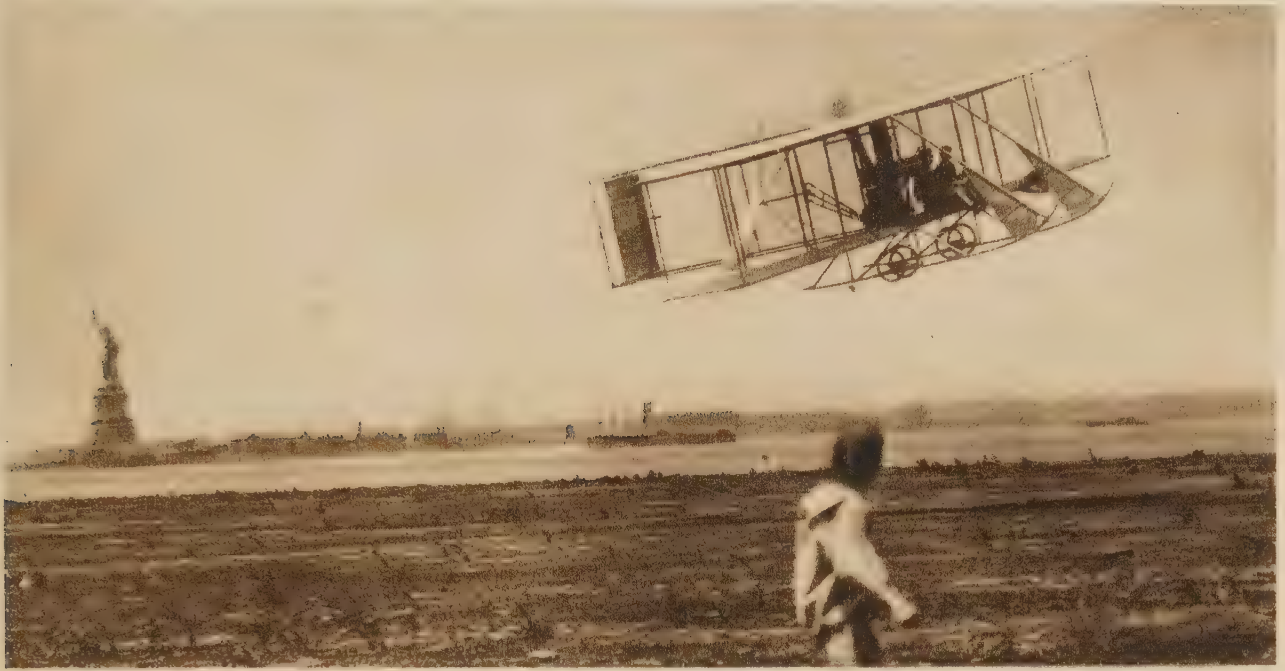
After Fort Myer, the Wright brothers separated. Wilbur stayed in America and Orville, with sister Katherine, reached Berlin on their joint birthday (August 19). They were invited guests on the day the Zeppelin first visited Berlin (August 29) and at Templehofer Field were presented to the Emperor, who showed much familiarity with the accomplishments of the Wrights, Katherine received an autographed portrait of Wilhelm II, and Orville made his first trip in the Zeppelin.

The German Crown Prince was eager to be taken into the air and later on (October 2) Orville made a brief flight with him as passenger. He had previously flown for the Empress to a height of 565 feet. Wright instructed Capt. Paul Englehardt and Herr Keidel of the German Wright company in flying, making a new passenger-carrying record of one hour and 35 minutes with the former, and a new altitude record—above 1,600 feet.

The photograph (left), in the Brown Brothers Collection, shows Orville Wright with Hart O. Berg, European representative of the Wright interests and Capt. Englehardt (right.) Photograph (below) in the Paul Thompson Collection shows Orville being presented to Gen. von Moltke, Chief of the German General Staff.

GENERAL VON MOLTKE, CHIEF OF GERMAN GENERAL STAFF, CONGRATULATES WRIGHT (Below)

First Flight Around Statue of Liberty—WILBUR WRIGHT—1909



WILBUR WRIGHT RETURNS FROM FLIGHT AROUND STATUE OF LIBERTY—Brown Collection

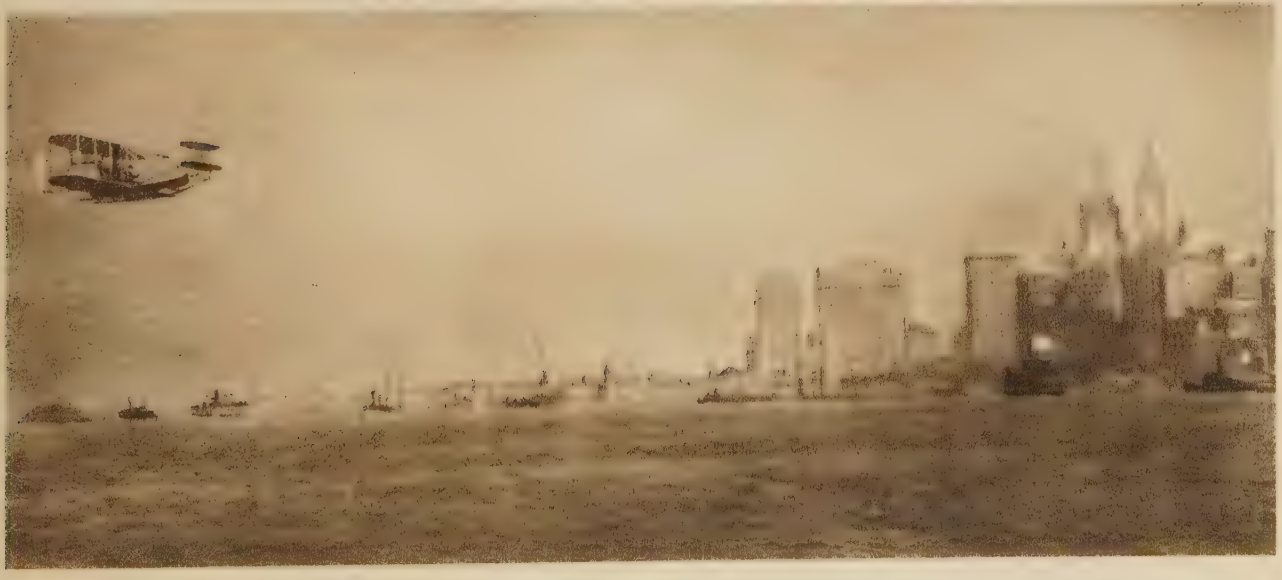
WILBUR WRIGHT made the first airplane flight in New York City. Various experimenters had tried to take the air around the metropolis, but New York's first real airplane flights were those of the elder Wright during the Hudson-Fulton Celebration (September-October, 1909).

He flew from Governor's Island around the Statue of Liberty and return (September 29), and from Governor's Island to Grant's Tomb and back (October 4). The first of Wilbur's flights was made the day Orville first flew conspicuously over Berlin; the other, the day Orville broke the altitude record over there; and the brothers exchanged cables.

Wilbur Wright's flight over water around New York was a startling achievement at the time—especially when he flew above the Hudson River, crowded with water craft of every description, and the air over it disturbed by heated columns from their smokestacks and by swirling currents from between tall buildings on shore.

He sailed up the Manhattan shore at an altitude of about 200 feet and came down in the less turbulent air on the Jersey side only about 50 feet above the river. He had fastened a canoe to his underbody in case of need. Wilbur meant, later that day, to make an even longer flight, but his motor blew out a cylinder head—and he packed up and returned to Washington to finish instructing Signal Corps officers in flying.

GOVERNOR'S ISLAND TO GRANT'S TOMB AND BACK—OVER THE HUDSON

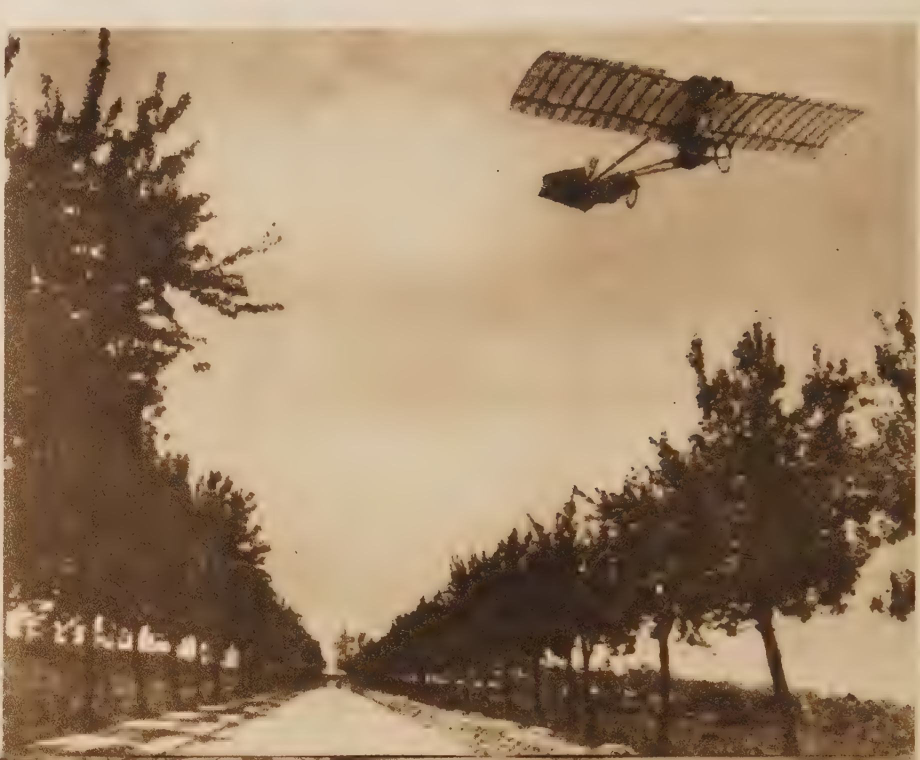


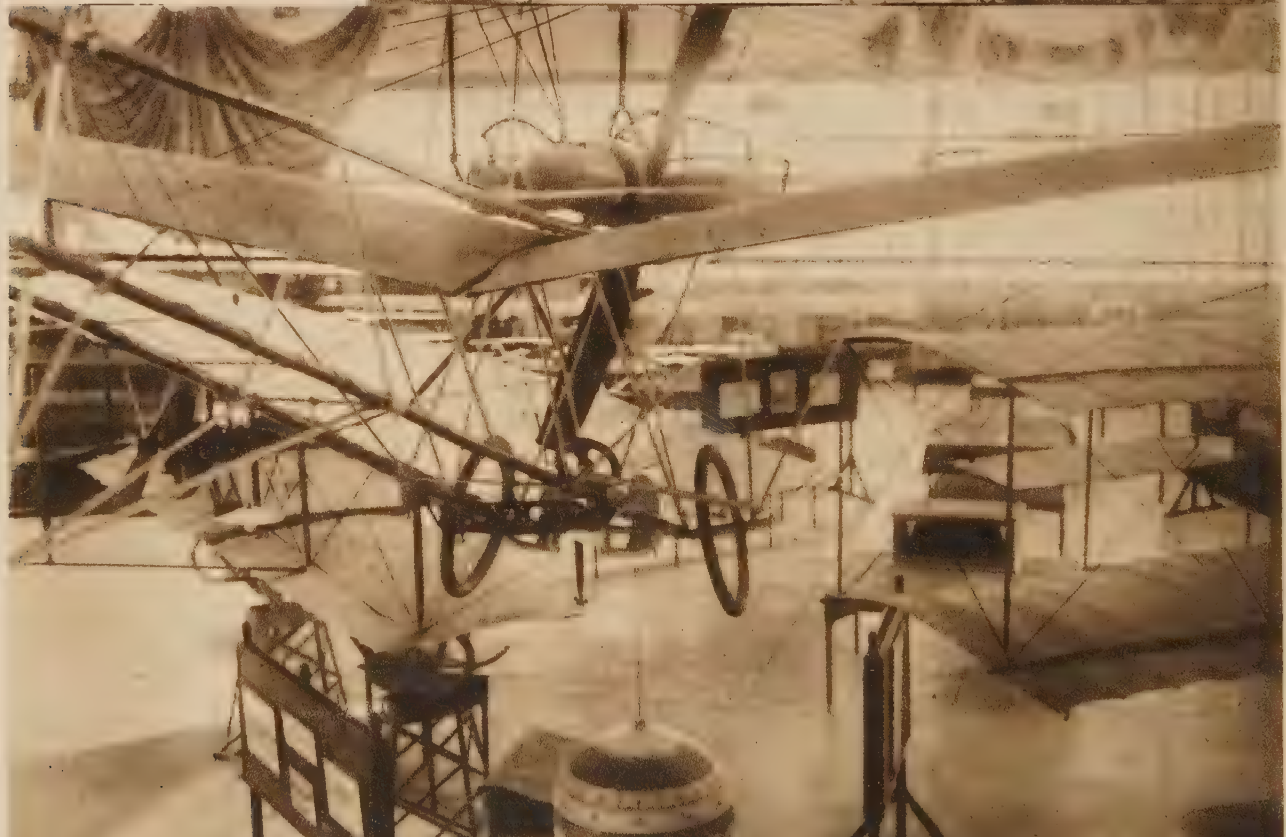
Official Records in the MUSEUM *at* CHALAIS-MEUDON — 1909

SANTOS-DUMONT again astonished French aeronautical circles when (September, 1909) he sailed across country from St. Cyr to Buc, four miles and three-quarters, in five minutes, at the utterly unprecedented speed of 55 miles an hour—in his tiniest of airplanes, the "Demoiselle."

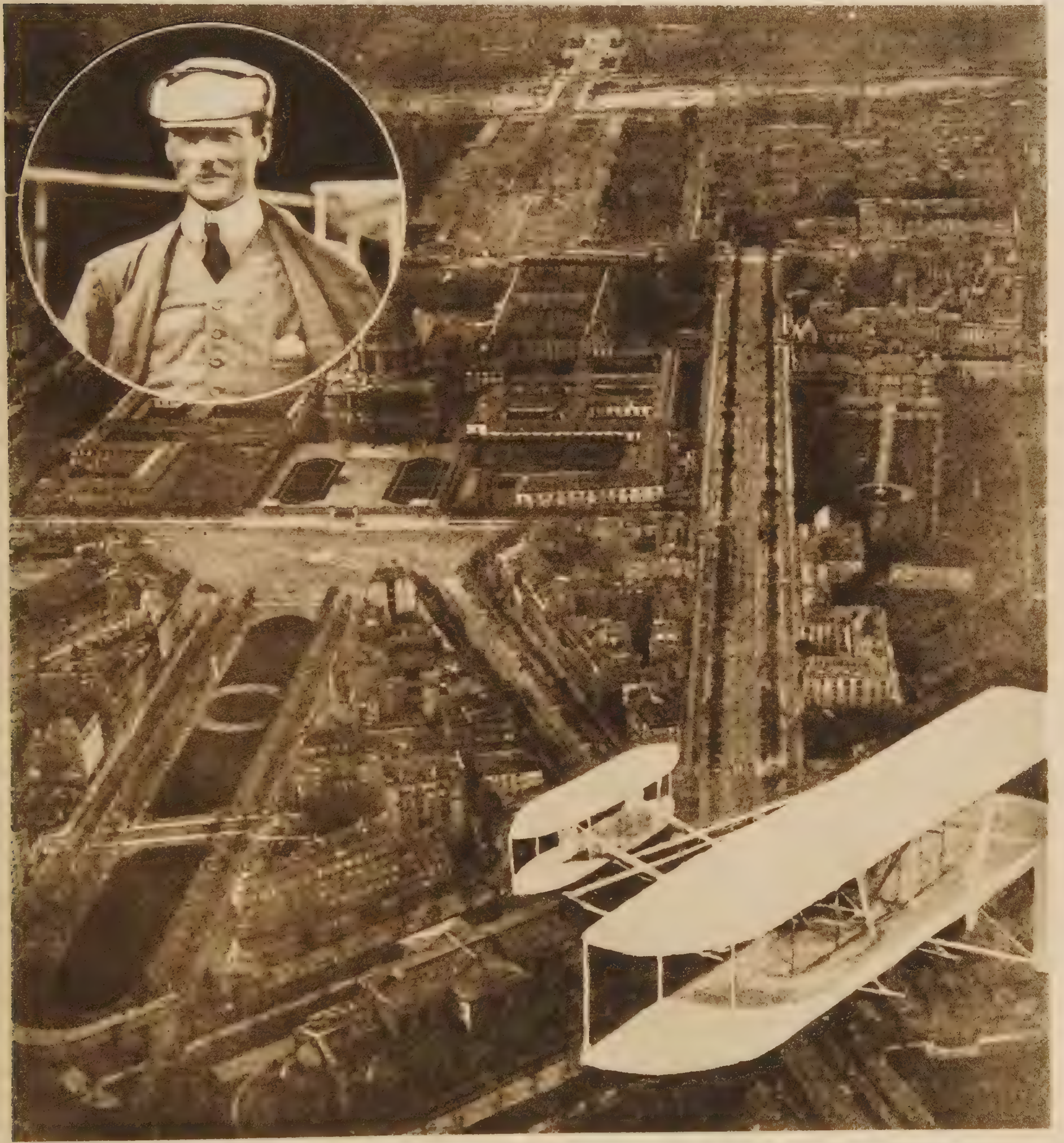
This little plane weighed but 59 pounds, ready to fly, and had a total wing surface of only 102 square feet. It had a triangular tubular frame and the operator sat beneath the wings. But it surely could fly, and it left the ground after a run of 60 feet—phenomenal for those days.

Santos-Dumont's Demoiselle, for which he made plans and specifications public, is now in the Aeronautical Museum at Chalais-Meudon, near Paris. Photograph (below) in Acme Collection.





First AIRPLANE *Flight Around* EIFFEL *Tower—Paris—* 1909



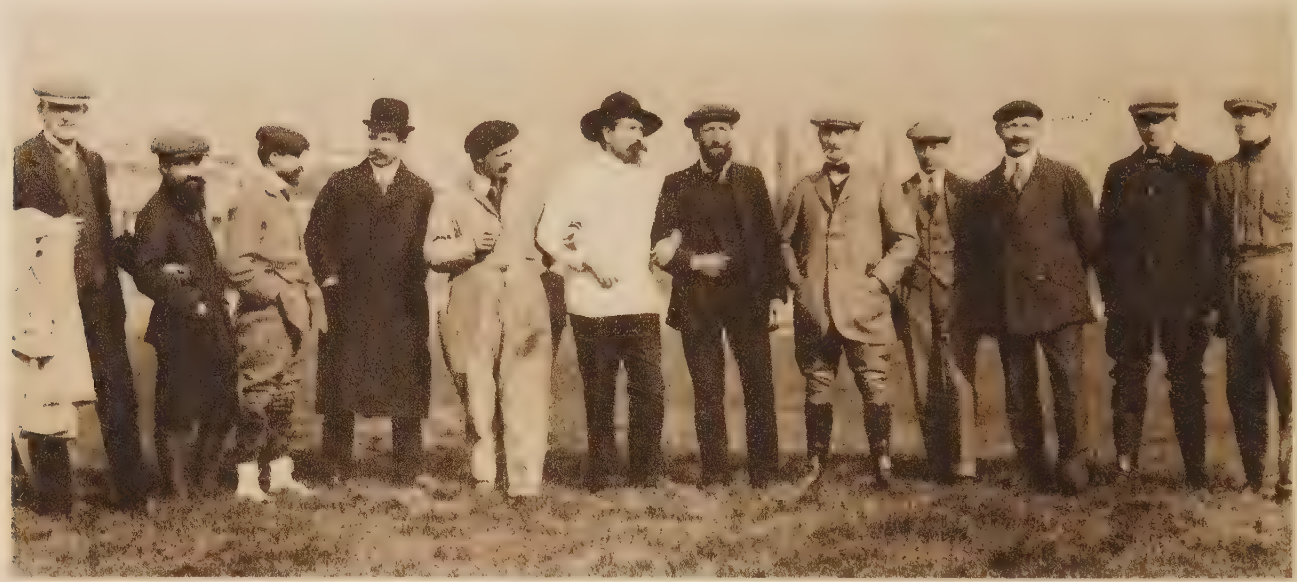
COUNT CHARLES DE LAMBERT made the most spectacular airplane flight of the year when (October 18, 1909) he flew over the city of Paris and circled the Eiffel Tower at the then startling altitude of 1,300 feet.

In a Wright biplane the Count rose from Juvisy airdrome and, after circling the field a few times to an altitude of 450 feet, shot off for Paris, pointing straight for the Eiffel Tower and gaining altitude. Once around the Eiffel Tower, he flew directly for Juvisy again, making the round trip of 31 miles in 49 minutes, 39 seconds.

Flying over so large a city as Paris was then considered pure folly, and Count Lambert had been flying hardly more than six months, having made his first flight as one of Wilbur Wright's original three pupils in France at Pau (March 17, 1909).

The photograph (above) of Count Lambert about to circle the Eiffel Tower was made from a balloon near the Tower by M. Andre Schelcher of Paris. Portrait of Count Lambert in circle in Acme Collection.

FAMOUS *Fliers at* ENGLAND'S *First* AVIATION *Meet*—1909

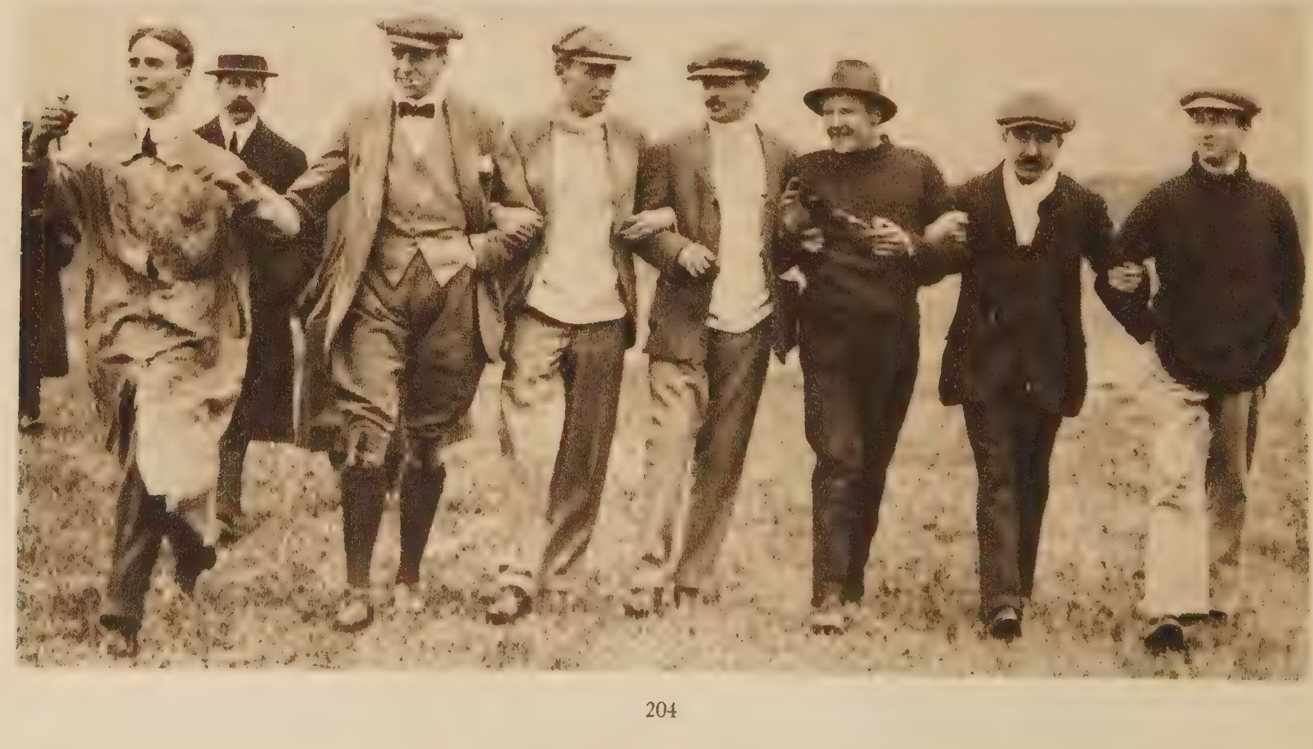


NOTED AIRMEN AT ENGLAND'S FIRST AVIATION MEET—(Above) Celebrities at first English Aviation Meet—Doncaster (1909). Left to right: Capt. Windham, Saunier, Sommer, Van der Bergh, Schreck, Col. Cody, Leblon, Delagrange, ————, Molon, ————, Preveteau. Photograph in Brown Brothers Collection.

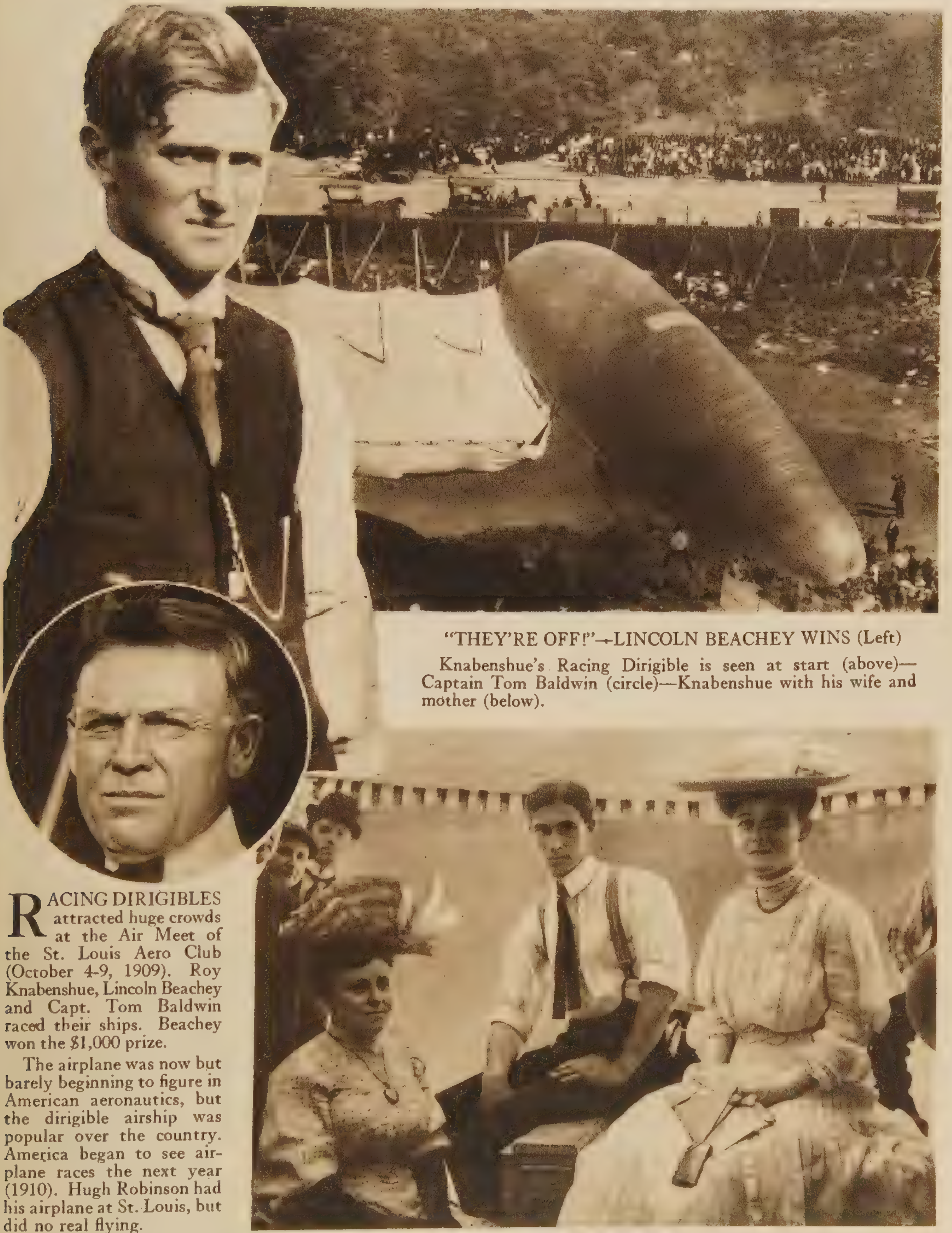
BRITAIN'S FIRST FLYING MEET occurred at Doncaster, England, near Sheffield, in Yorkshire (October 15-23, 1909). A rival meet at Blackpool, near Liverpool, opened the following Monday (October 18). Unprecedented throngs of spectators attended both meets. Doncaster claimed the palm because the 130 miles flown there went well ahead of the Blackpool record. Cody, Delagrange, Leblon and Sommer starred at Doncaster; while Farman, Roigier, Paulhan and Latham flew at Blackpool.

The next month (November, 1909) the third English Air Meet at Wolverhampton, near Birmingham, brought together the young flyers who were rapidly developing throughout the British isles. Grahame-White, destined to be a prominent figure in British aviation and to win prizes in America, first came before the public at this meet.

ENGLISH PIONEERS IN NEW AGE OF THE AIR—WOLVERHAMPTON—(Below). Left to right: Gilmour, Grahame-White, Astley, Spottiswoode, Radley, Lieut. Gibbs, Alan Boyle. Photograph in Paul Thompson Collection.



First CHALLENGE *Airship* RACE *in* AMERICA *St. Louis*—1909



"THEY'RE OFF!"—LINCOLN BEACHEY WINS (Left)

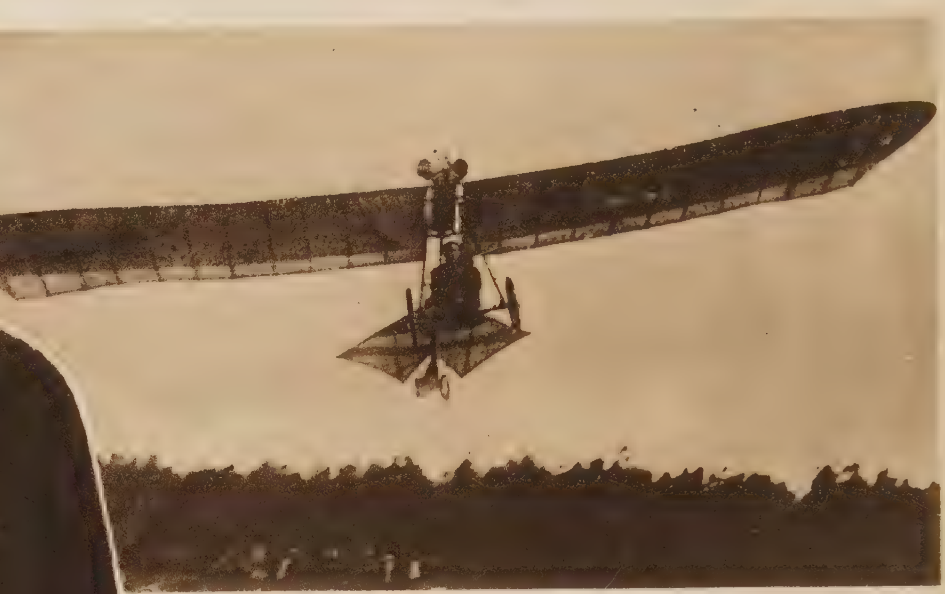
Knabenshue's Racing Dirigible is seen at start (above)—Captain Tom Baldwin (circle)—Knabenshue with his wife and mother (below).

RACING DIRIGIBLES attracted huge crowds at the Air Meet of the St. Louis Aero Club (October 4-9, 1909). Roy Knabenshue, Lincoln Beachey and Capt. Tom Baldwin raced their ships. Beachey won the $1,000 prize.

The airplane was now but barely beginning to figure in American aeronautics, but the dirigible airship was popular over the country. America began to see airplane races the next year (1910). Hugh Robinson had his airplane at St. Louis, but did no real flying.

First GERMAN AIRPLANE *in* FLIGHT *Near* POTSDAM—1909

HANS
GRADE

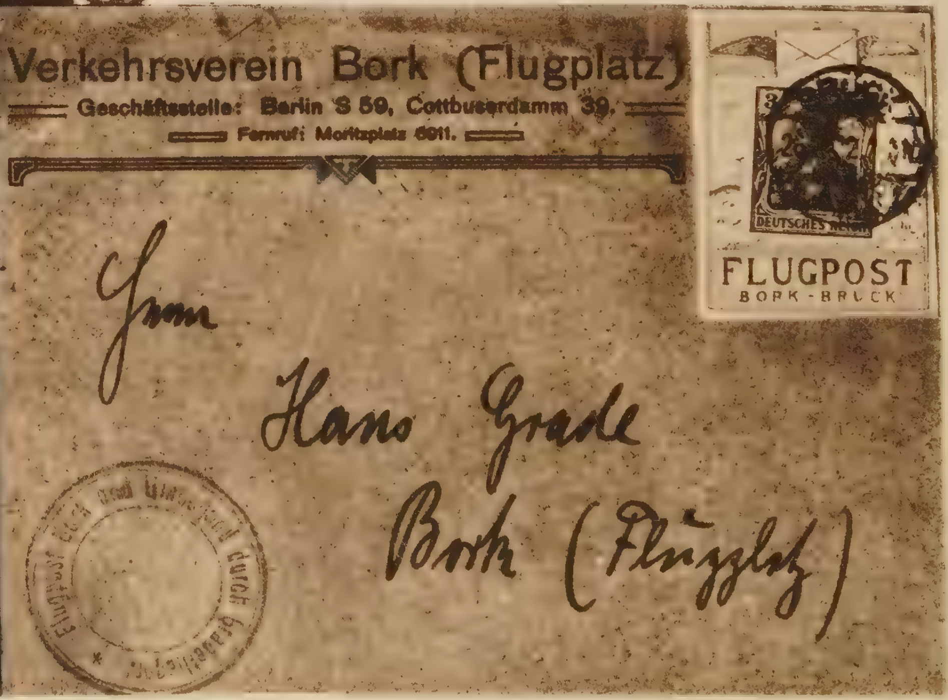


ENGINEER HANS GRADE designed and built the first German airplane. He flew it himself (November, 1909) over the flying field at Bruck, near Potsdam. Grade came twelve or fourteen years after Lilienthal—but his was the first power-driven airplane built in Germany—a monoplane which combined features of both the Santos-Dumont and Bleriot machines, with an Antoinette tail. The pilot sat beneath the wings.

Grade's longest flight this year was of 55 minutes' duration. He also made history by carrying the first piece of mail ever to be despatched by air.

Original Records in Government Archives in Germany and in the Ernest Jones and Paul Thompson Collections in America

FIRST LETTER SENT BY AIR IN WORLD'S HISTORY



Verkehrsverein Bork (Flugplatz)
Geschäftsstelle: Berlin S 59, Cottbuserdamm 39.
Fernruf: Moritzplatz 6911.

Herrn
Hans Grade
Bork (Flugplatz)

DEUTSCHES REICH

FLUGPOST
BORK-BRUCK

First WOMAN *to Make* ONE HOUR *Airplane* FLIGHT—1909

MLLE. HELENE DUTRIEU of Paris (above), was the first airwoman to make a one-hour airplane flight. At the Aerodrome de la Beauteal Etranger, near Paris, she flew 60 kilometers, 700 meters, (December 15, 1909), winning the 2,000-franc "Coupe Femina."

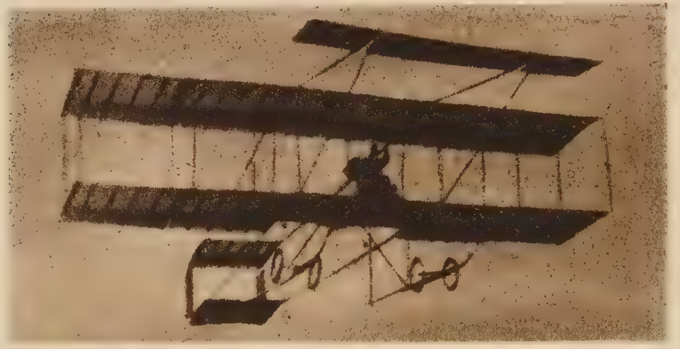
Mlle. Dutrieu was to be the first woman to carry an air passenger, at Mourmelon (April 20, 1910); and at Ostend, Belgium (September, 1910), to make a new world's altitude record for a woman pilot with passenger, 1,300 feet.

LEON DELAGRANGE (left), distinguished French airman already well known to these pages, was the second Frenchman to be killed in an airplane crash—at Bordeaux (January 4, 1910).

LOS ANGELES *Claims First* AVIATION *Meet in America*—1910

CURTISS BREAKS WORLD'S RECORDS AT LOS ANGELES MEET (Above)
American airman betters all others in quick start—He leaves the ground in 6 2-5 seconds.

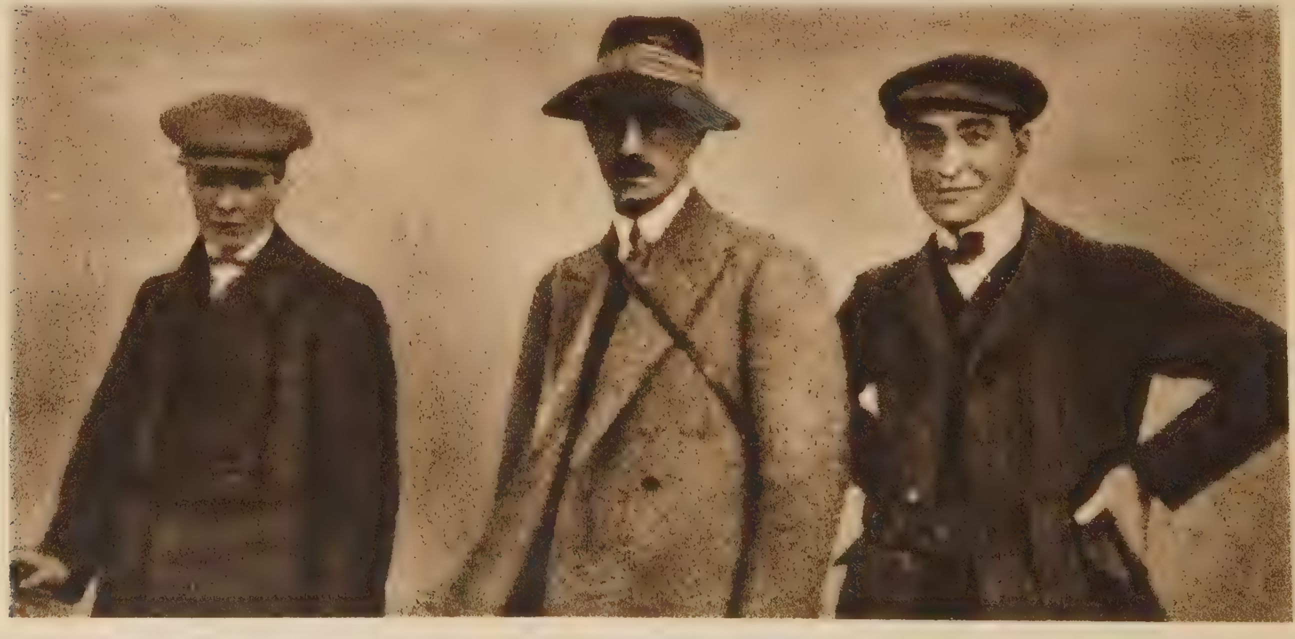
PAULHAN CLIMBS FOR STARTLING ALTITUDE RECORD (Below, left)
Premier French flier zooms up the aerial staircase to 4,165 feet, more than 700 feet above previous world's records.



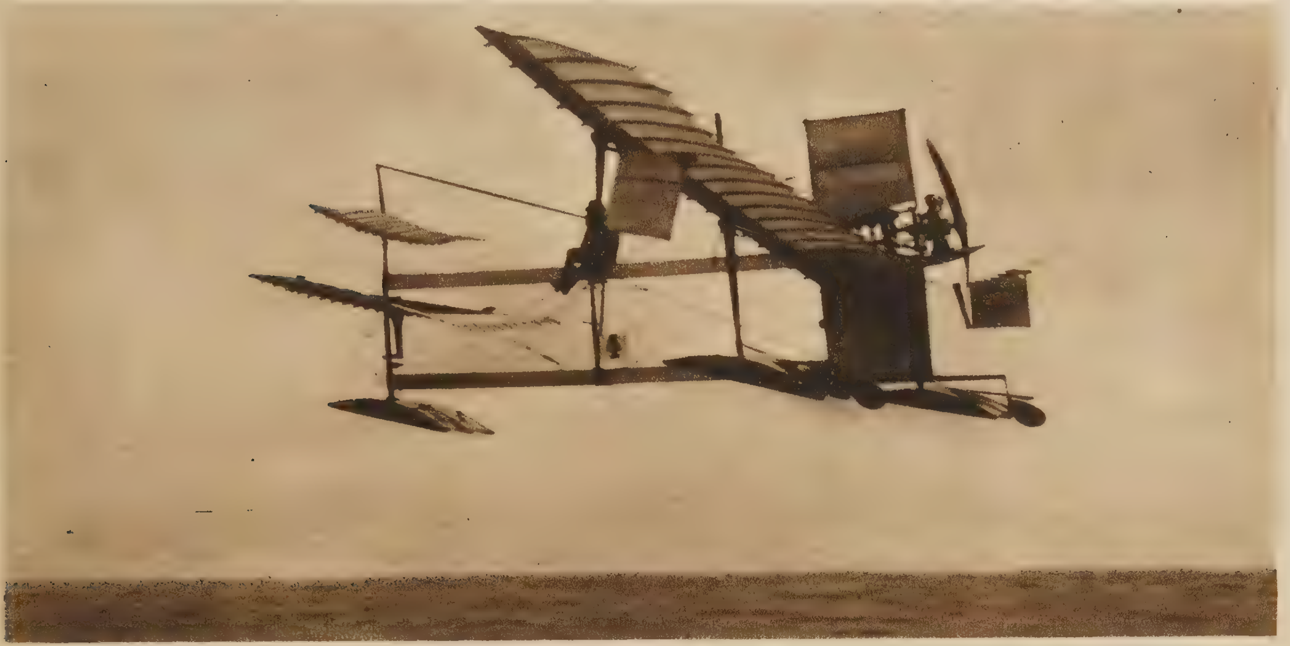
AMERICA Versus FRANCE was fought out in the air in the First Aviation Meet at Los Angeles (January 10-20, 1910). Louis Paulhan and two of his French aviator friends were brought over to compete with the Curtiss fliers who were representing America.

Tremendous crowds witnessed the events which resulted in sensational record-breaking. Glenn Curtiss headed his group personally; flying Curtiss planes were Clifford B. Harmon, Charles K. Hamilton, Charles F. Willard and Frank Johnson. Curtiss not only broke the quick starting record, but also the speed record with a passenger, making 55 miles an hour in the air.

FAMED EUROPEAN AIRPLANE PILOTS WHO FLEW AT LOS ANGELES (Below)—Noted French airmen who competed with Americans at this country's First International Air Meet are Maisson, Paulhan and Miscarol. They flew Farman biplanes and Bleriot monoplanes.



WORLD'S *First* FLIGHT *from the* WATER *in* FRANCE—1910



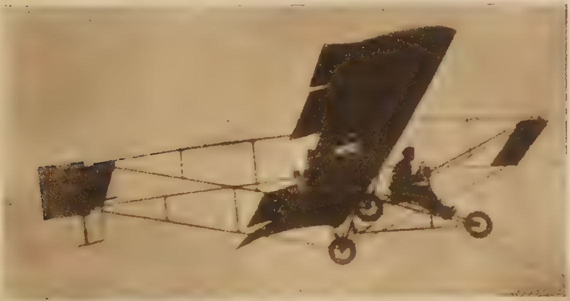
FRANCE MAKES FIRST AMPHIBIAN FLIGHT AFTER AMERICA INVENTS HYDROAIRPLANE
Photograph in French Archives and the Edwin Levick-Brown Collection in America.

HENRI FABRE, French airman, in the year following Curtiss' invention of the Seaplane, fitted a plane with three ricochet floats which enabled him to take off from the Gulf of Fos at Martigues, France (March 28, 1910).

We have seen Glenn Curtiss' attempt at this in the "Loon," actually the World's First Seaplane, at Hammondsport (1909). Fabre was the first to actually "take off" from the water. Early the following year (1911), we shall find Curtiss not only rising from the surface of San Diego Bay but landing on the water as well.

Fabre soon changed his scene of operations from Martigues to Monaco and his Amphibian (above) became a familiar sight at Monte Carlo and along the Riviera. He was a skillful and clever flier and had arranged an ingenious scheme of floats to enable him easily to rise from the bay.

These floats were of thin veneer, of hollow construction and curved fore and aft like wings—so that they not only gave a lift from the water but also had a certain lifting power in the air. The plane was amphibian as these floats enabled it to land on a sandy beach or in a meadow.



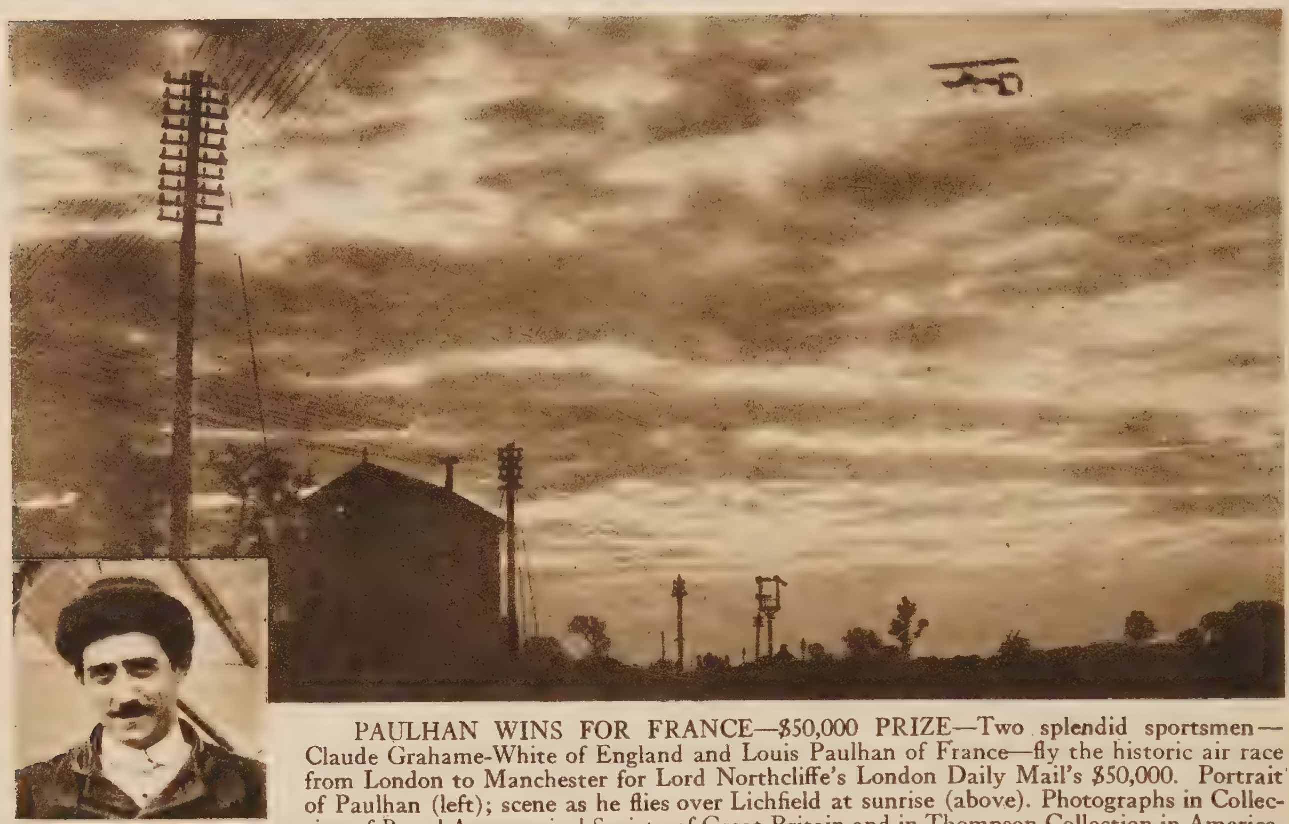
FIRST AMERICAN MONOPLANE

DR. HENRY W. WALDEN of New York, (above and right) flew at Mineola, Long Island, (early 1910) the "First successful All-American Monoplane" and the first American monoplane to pass the license tests of the Federation Aeronautique Internationale.

The first airplanes in this country were biplanes. Monoplanes of French origin—Bleriots and others—had been flown in America. But Dr. Walden was the first American to create one (late 1909), after considerable experimenting with biplanes.

In flight (above), Dr. Walden is seen in his machine which passed the official tests. It will be noted that it is equipped with a novel type of ailerons.

First GREAT AIR EPIC—FRANCE *Versus* ENGLAND—1910

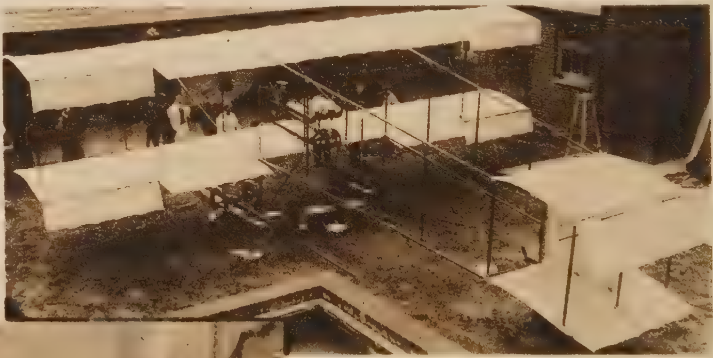


PAULHAN (Above)

PAULHAN WINS FOR FRANCE—$50,000 PRIZE—Two splendid sportsmen—Claude Grahame-White of England and Louis Paulhan of France—fly the historic air race from London to Manchester for Lord Northcliffe's London Daily Mail's $50,000. Portrait of Paulhan (left); scene as he flies over Lichfield at sunrise (above). Photographs in Collection of Royal Aeronautical Society of Great Britain and in Thompson Collection in America.

GRAHAME-WHITE started first (April 23, 1910) at 5.19 A.M.—to cover the 183 miles within 24 hours. After one stop he reached Lichfield, 117 miles from London, at 9.20 A.M. A rising gale prevented further flight, his machine was damaged on the ground and he was compelled to return to London.

Before Grahame-White could start again, Paulhan, just in from France, took off from London at 5.31 P.M. (April 27) and before dark landed in Lichfield. He was 50 miles away when White sailed after, to come down but 60 miles off.

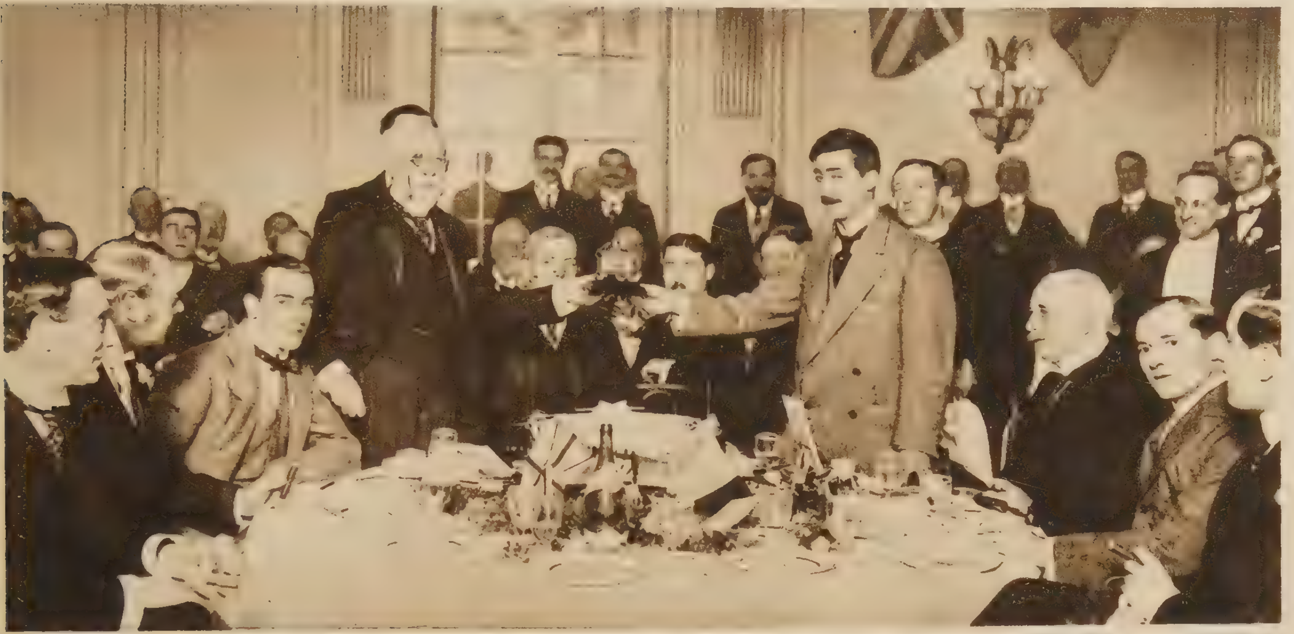


THE GREAT RACE was on! White was up again an hour before dawn. Engine failure forced him down just this side of Lichfield.

Meantime, Paulhan was in air at 4.09 A.M. Following the line of the London and North Western Railway he flew the 66 miles to Manchester cleanly, landing at 5.32. Paulhan had won for France in this first International Race.

Photograph (above) shows Grahame-White's plane at Whittington Inn. Original in Brown Brothers Collection. Photograph (left) shows Earl Roberts as he presents Grahame-White with the special gold medal of the British Aerial League for general merit. Paul Thompson Collection.

LORD NORTHCLIFFE'S *Award of* $50,000 *in* GOLD *to* VICTOR



JULES CAMBON HANDS PAULHAN THE GOLDEN CASKET CONTAINING £10,000. Left to right: Sir Rufus Isaacs, Lord Lonsdale, Grahame-White, Jules Cambon, the Duke of Argyll, Thomas Marlowe, Paulhan, Sir Edward Seymour, R. W. Wallace, K.C., Comte de Latours. Photographs in Brown Collection.

THE NOTED FRENCH DIPLOMAT, Jules Cambon, then French Ambassador to England, at a gala luncheon at the Savoy Hotel the Saturday after the race (April 30, 1910) presented Paulhan with the *Daily Mail's* beautiful golden casket emblazoned in brilliant enamels with the French and English flags.

It contained $50,000 in gold offered by Lord Northcliffe. The donor was not able to be present and his representative Editor Thomas Marlowe of the *Daily Mail*, presided at the luncheon. M. Cambon also presented Grahame-White with a handsome silver Consolation Cup. Both airmen made felicitous remarks, one in French and the other in English.

SPORTSMEN OF TWO NATIONS LEAVE SAVOY HOTEL—PAULHAN AND GRAHAME-WHITE

SAVOY HOTEL

GLENN CURTISS *on First* GREAT FLIGHT *in America*—1910

HIGH OVER RUGGED STORM KING MOUNTAIN—GLENN CURTISS startles the nation with "The greatest flight in America." He flies the 142½ miles from Albany to Governor's Island, New York City, (May 31, 1910), with stops at Poughkeepsie and Spuyten Duyvil, flying above the Hudson River the entire distance. Photographs in Augustus Post and Pictorial News Collections.

PART XIV

FIRST LONG FLIGHTS *on* TWO CONTINENTS

AERIAL AGE *Enters Upon* ERA *of* GREAT EXPANSION

ALL WORLD RECORDS are now to be broken (1910). The day of experimental flights has passed and we enter the era of expansion. Pioneers, later to be known as the "Early Birds," have staked their lives to prove the practicability of navigation by air.

Financial genius now comes to the support of inventive genius in the development of the Aerial Age. The Morgans and Charles R. Flint stood by in perilous days.

Noted capitalists now come to the front—August Belmont, Cornelius Vanderbilt, Howard Gould, Edward J. Berwind, Morton F. Plant, Allan A. Ryan, Russell A. Alger, Theodore P. Shonts, Andrew Freedman, Robert J. Collier, Pliny W. Williamson, and Alpheus S. Barnes, stand back of the Wrights. Curtiss is backed by another group of eminent financiers.

The celebrated patent litigation between the Wrights and Curtiss begins. This alone, with the story of the financing of the great aeronautical industry, requires a volume in itself—a notable historical record of the men behind the New Age. In Europe, we find the Krupps, Hugo Stinnes, and the great bankers of Germany, France and England financing the new Industry.

With the power of finance behind the new science, we witness the first long flights on the two continents: Glenn Curtiss makes the First Great Flight on the Western Hemisphere (May 31, 1910) from Albany to New York—142½ miles in 2 hours, 50 minutes, at an average speed of 54 4-5 miles an hour.

The First Non-Stop Round-Trip Flight across the English Channel is made by Rolls of England (June 2, 1910). The First Flight from New York to Philadelphia and return by airplane is made by Hamilton (June 13, 1910)—over 149 miles in 3 hours, 27 minutes.

The First Commercial Voyage of a Zeppelin—300 miles with 32 passengers and crew—is made from Friedrichshafen to Dusseldorf (June 22, 1910). England, France, and America compete in the Great Air Classic at Bournemouth (June 10-16, 1910). Latham establishes a new world altitude record at Rheims (July 7, 1910) by attaining 4,541 feet; Brookins beats this record at Atlantic City by rising 6,175 feet (July 7, 1910); Drexel at Lenark raises to 6,604 feet (August 11, 1910).

The First Paris to London Airplane Flight is made by Moisant, an American (August 16–September 6, 1910); the First Flight across Long Island Sound is made by Harmon (August 20, 1910); the First Message by Wireless from an Airplane is sent by McCurdy (August 27 ,1910); the First Airship Voyage is made from Paris to London (September 16, 1910).

"The Greatest Aviation Meet in America" is held on Boston Harbor (September 3–13, 1910) with England and America competing for $100,000 in prizes; President Taft witnesses the international event. The First Airplane Flight across the Alps is made by Chavez (September 23, 1910) who shortly before raised the world's altitude record to 8,400 feet; the First Flight over the Pyrenees is made by Tabuteau (September 28, 1910). The First President to Fly in an Airplane is Roosevelt (October 11, 1910) with Hoxsey at St. Louis during the Taft administration. Aviation has now gained its momentum.

First AUSTRIAN AIRPLANE *and* CHINESE *Fliers*—1910

FIRST AUSTRIAN AIRPLANE was designed and built by Igo Etrich, a distinguished engineer of Vienna (Spring of 1910) and was flown by Herr Illner, already known as a skillful pilot. The inventor of the original Austrian plane is seen in the picture (left) wearing an overcoat; the other is Pilot Illner.

Etrich privately worked on the design and manufacture of this airplane for four years before he was satisfied to have it flown. The result was a degree of perfection which made it possible for Illner to fly the plane (May 14, 1910) a distance of 84 kilometers in 80 minutes, at an altitude of 300 meters, exceeding all existing Austrian records for flying distance, duration and altitude.

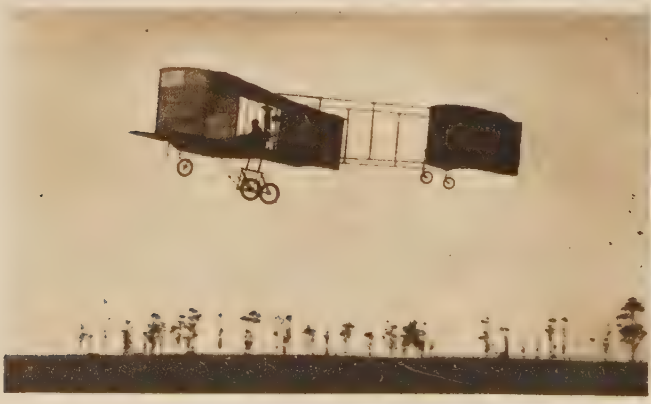
Illner flew the Etrich plane at the Johannisthal meet in Germany with great success (October, 1910). It had flexible wings and possessed such stability that he was even able to manipulate it in the air without using his hands. Photographs (left and below) in the Thompson Collection.

FIRST CHINESE TO FLY IN AIRPLANE were two members of the Chinese Embassy at Vienna. Zy Lee and Zy An, young secretaries in the diplomatic service, athletes and sportsmen. They were taught by Pilot Illner in an Etrich monoplane.

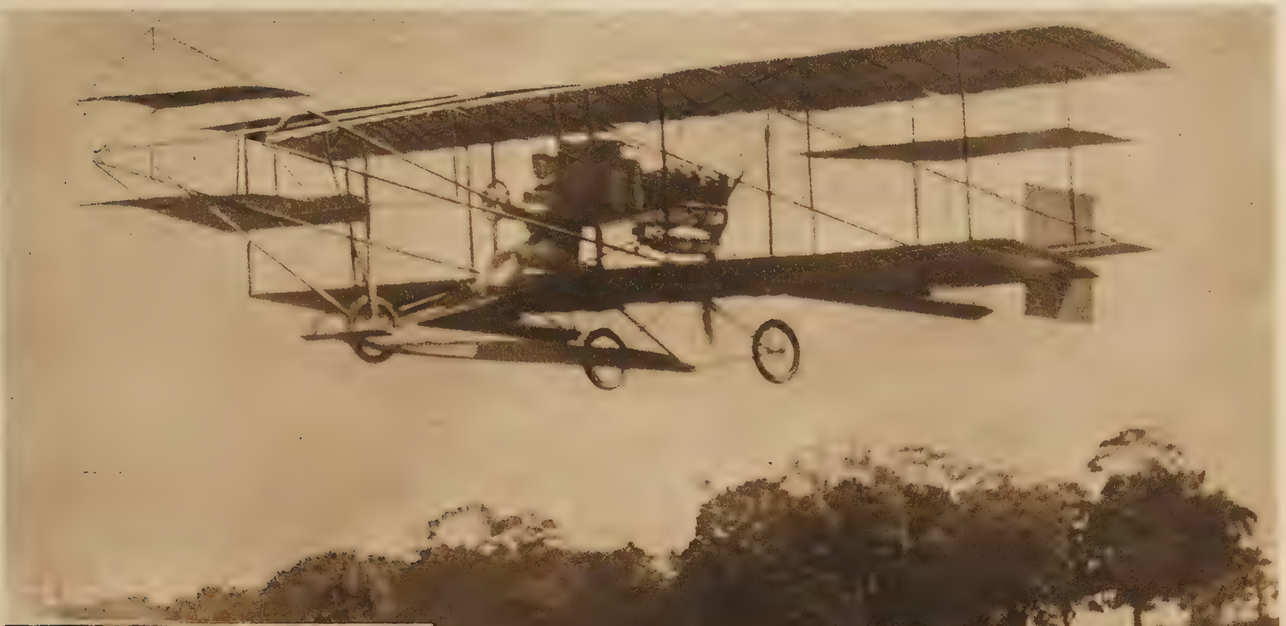
Illner was becoming one of the most noted pilots in Europe and his flying was making him a prominent figure in the aviation world. He had other pupils at the Neustadt field near Vienna, but took especial interest in these two young Chinese. The photograph (right) in the Thompson Collection shows Zy Lee, Illner and Zy An ready to fly.

FIRST MAGICIAN TO FLY—HARRY HOUDINI, American illusionist par excellence, was the first great magician in the world to see the possibilities of aviation. He had an airplane of the Farman type constructed (1910) and filled numerous flying engagements in different parts of the country. Voluntarily submitting himself to the perils and difficult situations to which he was accustomed, there was only one more added thrill in flying an airplane. Houdini even frequently went by air, from city to city, to fill engagements.

Photographs (below) in the Ernest L. Jones Collection.



First FLIGHT *from* ALBANY *to* NEW YORK—*Curtiss*—1910



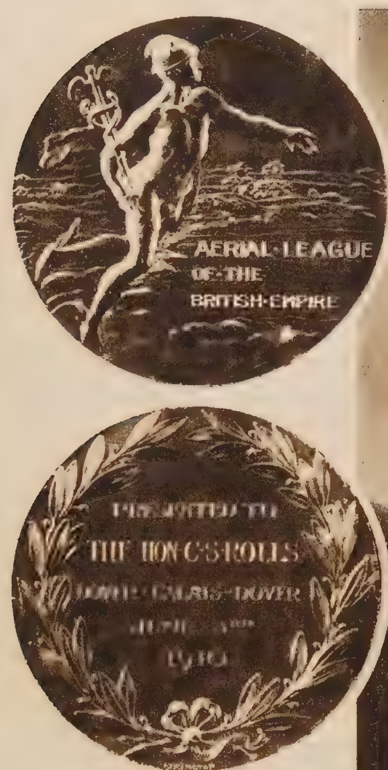
ALBANY-TO-NEW YORK FLIGHT of Glenn Curtiss was the sensation of the day all over America (May 31, 1910). It was the first long airplane flight in the Western Hemisphere. The air champion flew 142½ miles between the two cities in 2 hours, 50 minutes of flying time at an average speed of 54 4/5 miles an hour, winning the $10,000 prize offered by the *New York World*.

Curtiss flew 1,000 feet in air above the Hudson River, much of the time. Going even higher, he dropped down to 300 or 400 feet to race the special train which roared down the east side of the river and had difficulty in keeping up with him.

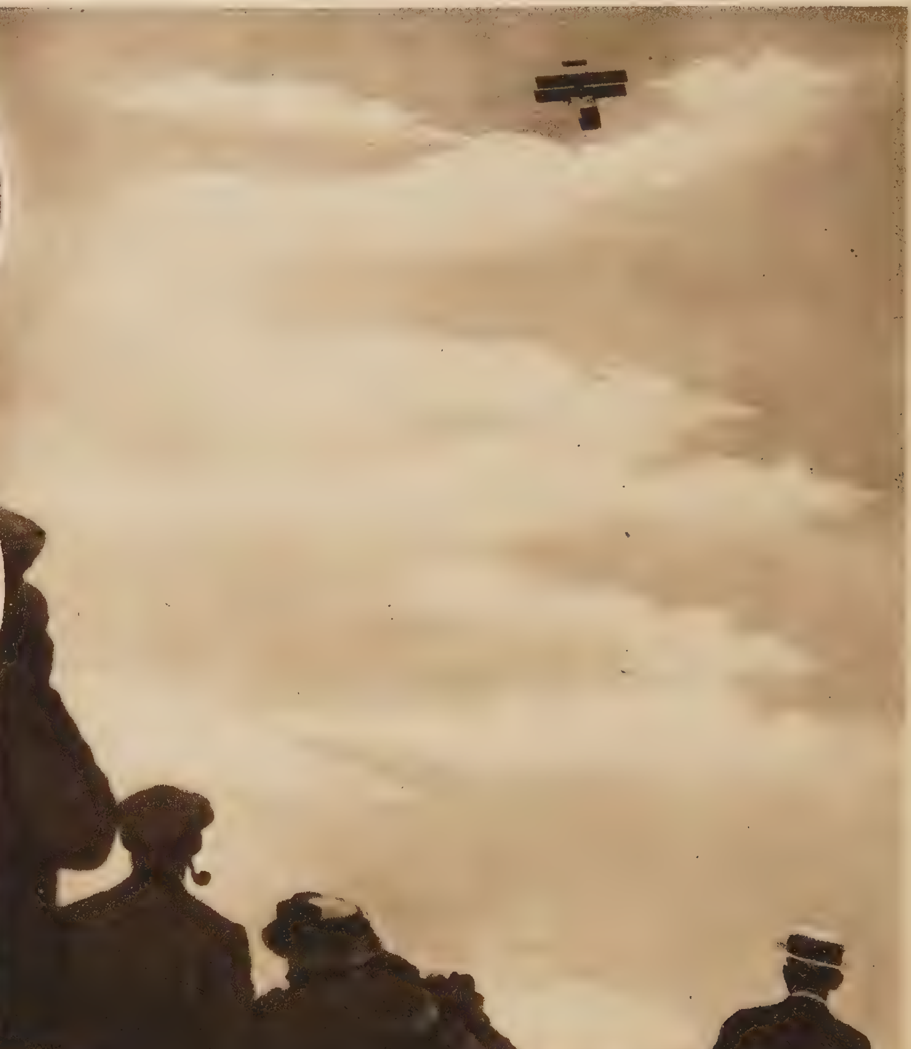
When Curtiss reached New York, he came down in a meadow at Inwood for oil and then went up again and flew on to Governors Island—with the eyes of a million people upon his daring adventure.

These historic photographs record the great event. Curtiss is just leaving Poughkeepsie, his first stop (above). The tiny plane is flying high above the United States Military Academy at West Point (below). We see Curtiss (center) delivering the first piece of mail to be carried by air in America—a letter from the Mayor of Albany to the Mayor of New York. Original Photographs in the Private Collection of Glenn Curtiss.

First Non-Stop ROUND TRIP *Across* ENGLISH *Channel*—1910



HONOR MEDAL
Presented to
Honorable
CHARLES
STEWART
ROLLS
Records in Royal
Aeronautical Society
in Great Britain



ROLLS FLIES HIGH OVER DOVER

HON. CHARLES STEWART ROLLS of England (left), son of Lord Llangattock, was the first airman to cross the English Channel in an airplane starting from the English side, first to fly a biplane across the Channel and first to make a non-stop round trip across this famous body of water—from Dover, England, to Sangatte, France, and return (June 2, 1910).

In his Wright biplane Rolls zoomed up from Dover, flew straight for Sangatte, dropped three messages and, without stopping, flew back at once, taking exactly an hour and a half for this 55-mile flight, 50 miles of which was over water, the longest over-water flight to date.

Photograph of Rolls in his plane ready to fly in Brown Brothers Collection in America—Rolls in flight in Paul Thompson Collection.

First FLIGHT *from* NEW YORK *to* PHILADELPHIA—1910

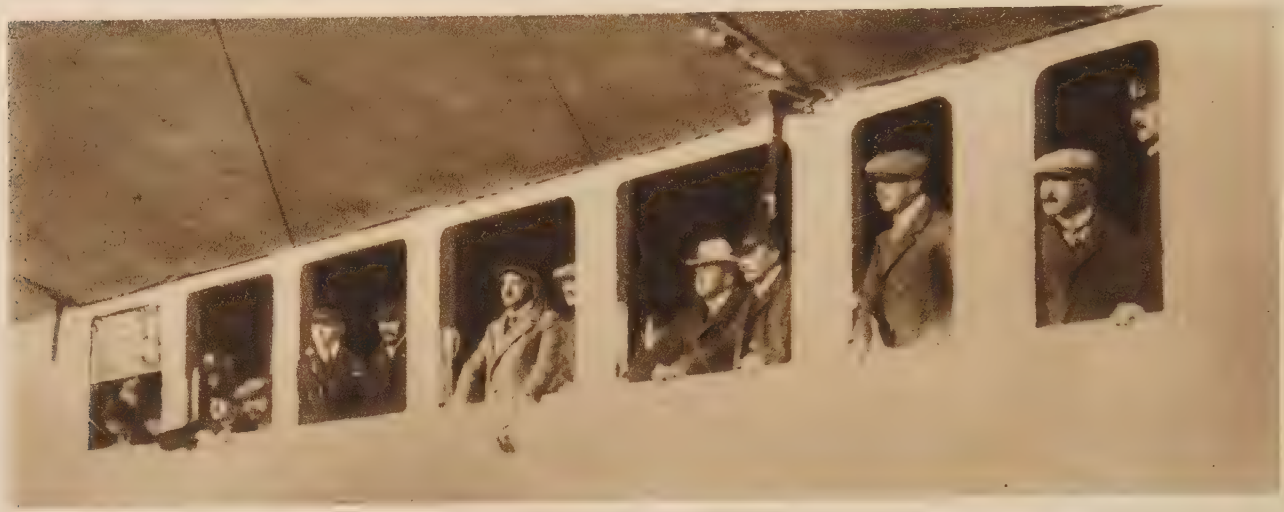
HAMILTON WINS $10,000 PRIZE IN AMERICA

CHARLES K. HAMILTON, daring Curtiss flier from Connecticut, first flew across country in America—over cities and towns from New York to Philadelphia and return in one day—149.54 miles total in 3 hours, 27 minutes of flying time.

Hamilton won the $10,000 prize offered by the *New York Times* and *Philadelphia Ledger* (June 13, 1910).

Carrying only a life preserver, he made Philadelphia, 86 miles, in 103 minutes from Governor's Island, with a stop at North Philadelphia. He flew back, with a stop at North Amboy, New Jersey, in 104 minutes. He became a celebrated figure in America. His defeat of the racing motor car (below) came later. Photographs in the Brown Collection.

WORLD'S *First* PASSENGER AIRSHIP—*Deutschland*—1910



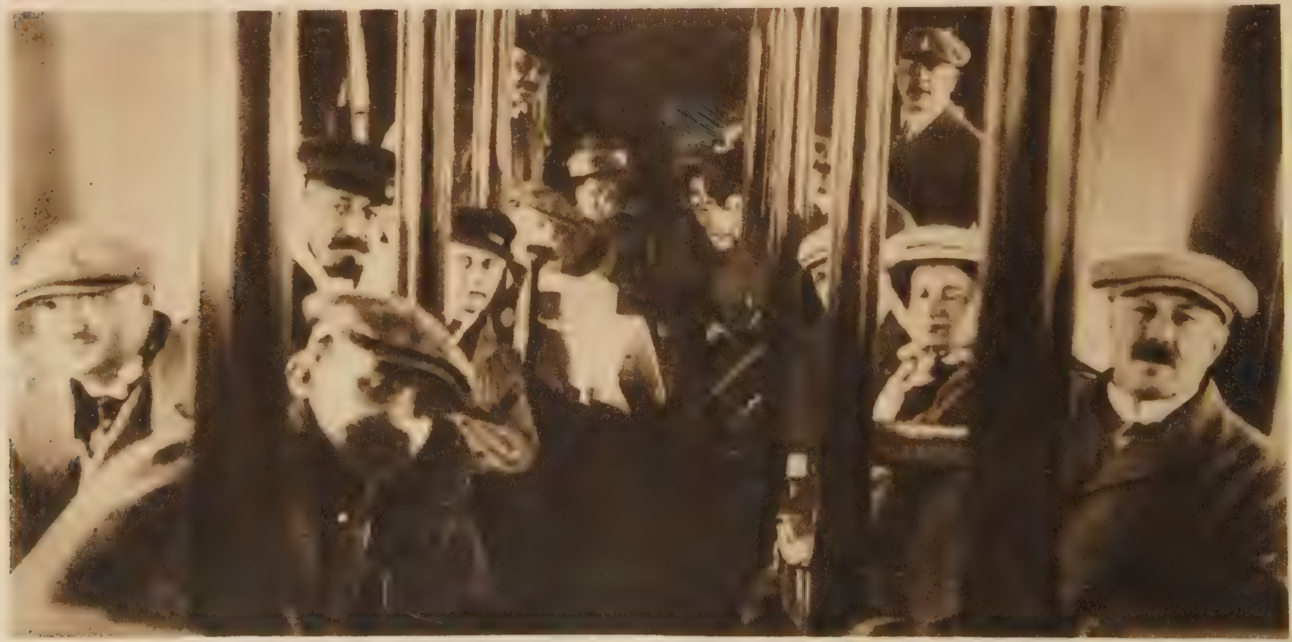
COUNT ZEPPELIN'S FIRST COMMERCIAL AIRSHIP, the "Deutschland" (*Zeppelin VII*), on its initial trip sailed from Friedrichshaven (June 22, 1910) for Dusseldorf, 300 miles distant. Zeppelin was in command with twenty passengers aboard—at $50 each—the first group to make a cruise in a passenger Zeppelin.

After a splendid voyage of nine hours, they landed easily at Dusseldorf; the next day they sailed on to Dortmund, 37 miles north, and returned later to Dusseldorf. There were 32 passengers aboard on her arrival, 10 of whom were women.

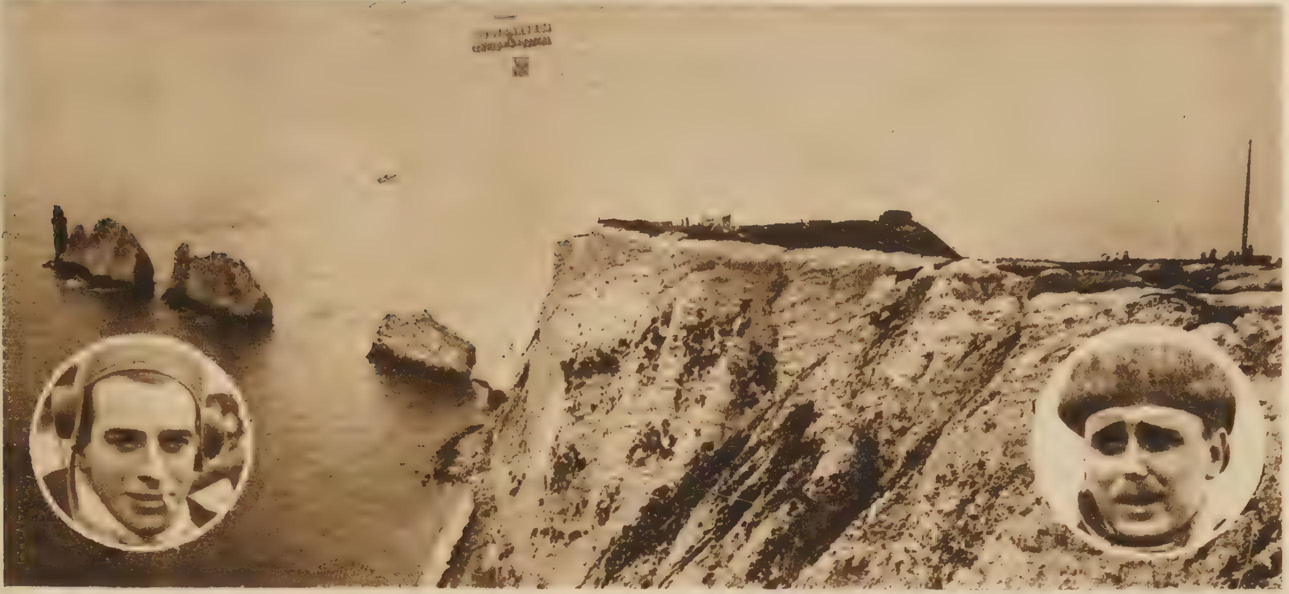
Five days later (June 28, 1910) the "Deutschland" was wrecked in a terrific storm. She crashed in the treetops of the forest of Teutoberg, 80 miles from Dusseldorf. Her handsome aluminum cabin, lined with mahogany and rosewood inlaid with pearl, was completely smashed, but her 33 passengers and all her crew were saved.

The "Deutschland" was the first craft of the World's First Transportation Company, formed in Germany (December, 1909) with a capitalization of $750,000. They planned a fleet of huge Zeppelins to connect various German cities, and operated four ships in the ensueing four years. The "Schwagen" covered 6,700 air miles (1911) and carried on its voyages 1,675 passengers. The following year the "Victoria Luisa" covered 15,955 miles and carried 3,902 passengers.

INSIDE THE CABIN OF THE WORLD'S FIRST PASSENGER AIRSHIP—ZEPPELIN—Acme Collection.



Race of THREE NATIONS—*France—America—England*—1910



GRAHAME-WHITE OVER "THE NEEDLES," ISLE OF WIGHT, IN AIR CLASSIC—Paul Thompson Collection.

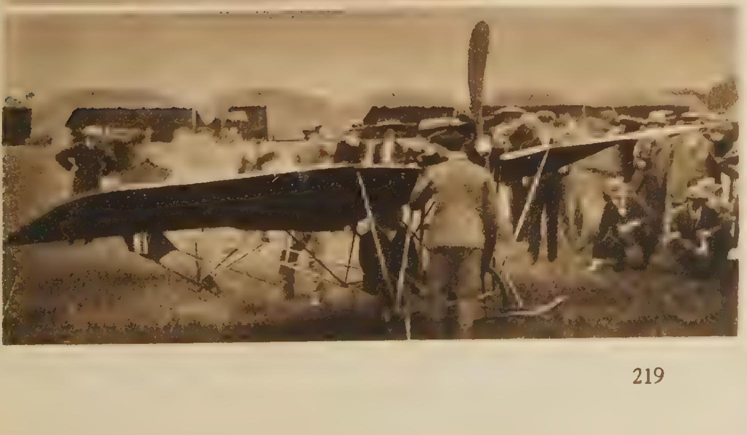
ENGLAND'S GREAT AIR MEET, at Bournemouth (July 10-16, 1910), starred three notable international fliers: Leon Morane of France—J. Armstrong Drexel of America—and Claude Grahame-White of England. Their records showed striking advances in the year since the first air meet at Rheims (1909).

Morane won the notable air race (July 15) from Bournemouth around "The Needles" Light, Isle of Wight, and return—21 miles, 18 over water—in 25 minutes, 12 2-5 seconds, at 50 miles an hour. Drexel (above, right) was second, his time being 35 minutes, 28 seconds. Grahame-White was third with 45 minutes, 47 seconds. The prize was $4,000.

LEON MORANE, VICTORIOUS Frenchman (left), attained note as an airplane pilot before Bournemouth, having just broken the world's speed record by flying over 66 miles an hour at the second Rheims meet (July 10, 1910).

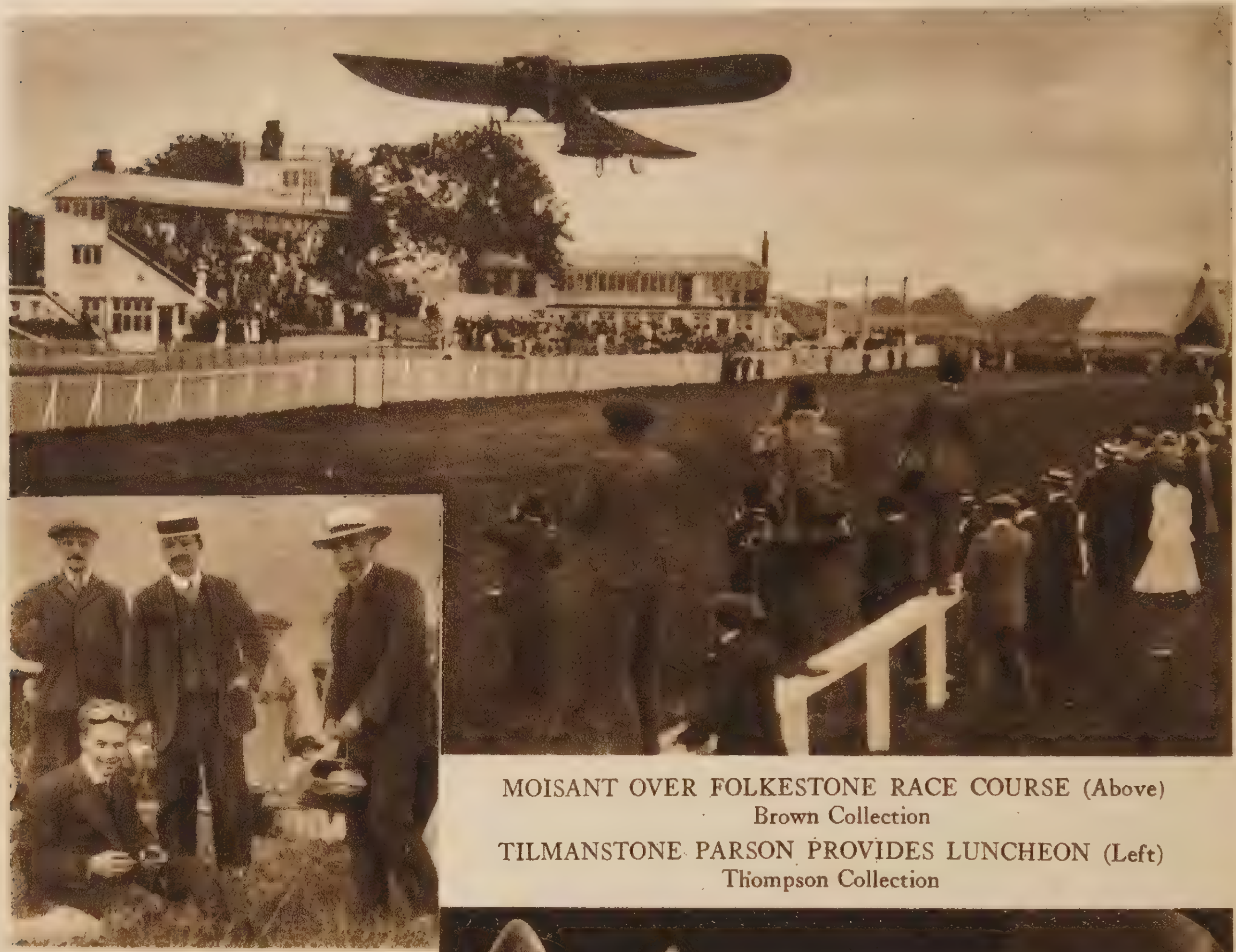
At Bournemouth, Morane won the altitude flight, soaring to 4,107 feet, and took first prize for the meet and a special award of $2,500 for general merit. Photograph in Thompson Collection.

FIRST ENGLISHMAN TO CRASH—The Monument (right) was erected at Monmouth, England, and dedicated by Lord Raglan in memory of Hon. Charles Stewart Rolls, first English pilot to die in a crash. This fatality occurred at the Bournemouth meet (July 12, 1910), when Rolls broke a front elevator in a sharp dive. Photograph in Brown Collection.



AUDEMARS AT BOURNEMOUTH in the "INFURIATED GRASSHOPPER" This "Demoiselle" Airplane was built by Santos-Dumont.

AMERICAN *Makes First* LONDON-PARIS *Airplane Flight*—1910



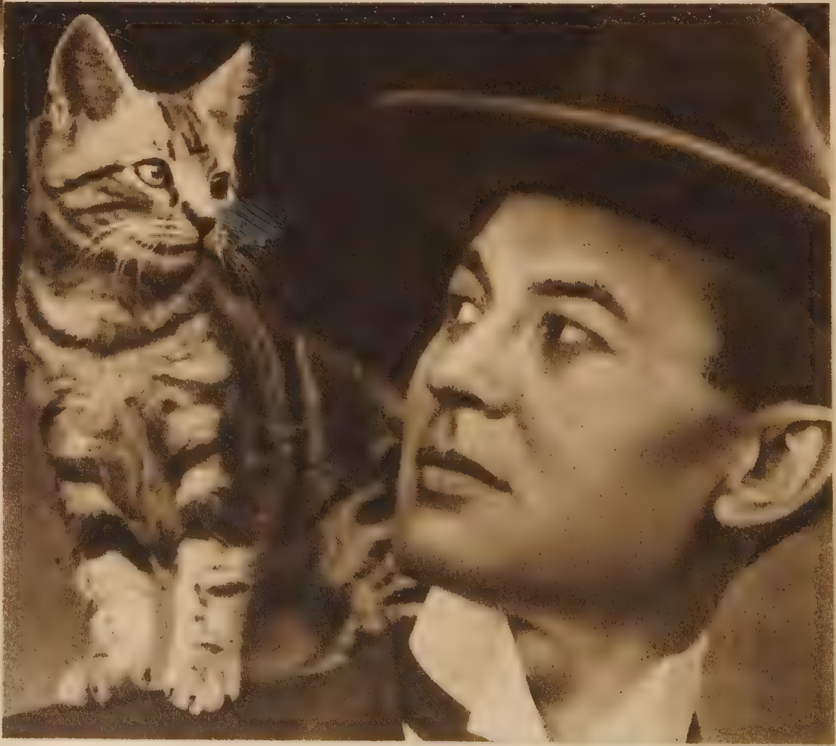
MOISANT OVER FOLKESTONE RACE COURSE (Above)
Brown Collection
TILMANSTONE PARSON PROVIDES LUNCHEON (Left)
Thompson Collection

JOHN B. MOISANT (right) 35-year-old Chicago architect who crowded a vast amount of flying distinction into a single year (1910), was first to cross the English Channel with a passenger (August 17, 1910), in the first Paris-to-London airplane flight.

Moisant, who had been flying but a few weeks, carried two passengers between the two cities in his Bleriot monoplane—his mechanician, Albert Fileux, and his pet cat, "Miss Paris." The aviator weighed 135 pounds; Fileux, 175 and "Miss Paris," 10 pounds.

They left Paris (August 16) for Amiens, flew to Calais next morning and then over the Channel—some 25 miles, in 32 minutes—to Tilmanstone, 7 miles from Dover, England.

Moisant came down to service his plane and he and his passengers were given lunch by delighted villagers. After many delays, they finally reached London (September 6). Photograph of Moisant with "Miss Paris," first cat to cross the Channel (right), in Underwood and Underwood Collection.



First FLIGHT *Across* LONG ISLAND SOUND—*Airplane*—1910

CLIFFORD B. HARMON won fame in America and France. Sportsman and aeronautical enthusiast, he flew from Garden City, Long Island, to Greenwich, Connecticut (August 20, 1910), to win the "Country Life in America" Trophy.

He made the 25 miles in 29 minutes, flying over Roslyn, Port Washington, crossing the Sound in 10 minutes, circling above the Larchmont Yacht Club and landing near the home of his father-in-law, Commodore E. C. Benedict, in Greenwich. He struck unseen telephone wires when about to land and wrecked his plane, a Farman biplane recently purchased from Louis Paulhan, famous French flier.

Mrs. Clifford Harmon also won a cup in connection with this flight over the Sound—as the first person to reach him when he came down, on land or water.

HARMON AND GLENN CURTISS—Underwood Collection

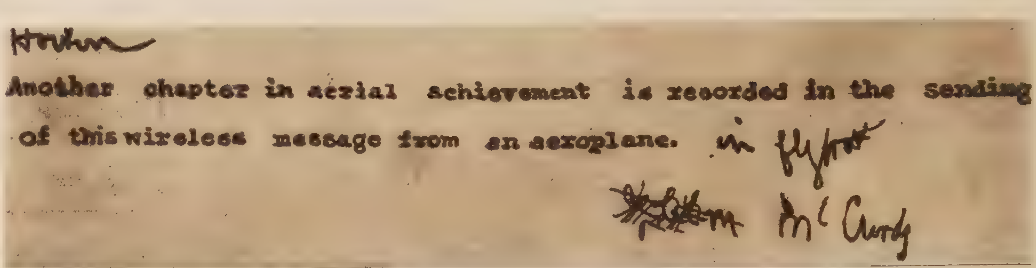
HARMON IN FLYING COSTUME—Thompson Collection

A GREAT PIONEER in the New Age of the Air. Harmon's first plane was a Curtiss, in which he is shown (above). In this he was to win the Harvard Cup at the Boston Aviation Meet—as the best amateur pilot in bomb throwing—and also amateur cups for speed, duration and slow time.

Harmon became president of the Aero Club of America and won great distinction in the aeronautical world. Before taking up the airplane he had been an amateur balloon pilot of prominence. With Augustus Post, he made the American balloon duration record of 48 hours, 26 minutes (claiming altitude of 24,200 feet)—St. Louis to Ednia, Missouri (October 4, 1909).

First MESSAGE *Sent from* AIRPLANE *by* WIRELESS—1910

SHEEPSHEAD BAY
(August 27, 1910)
Sent by
J. A. D. McCURDY
Received by
H. M. HORTON



Horton

Another chapter in aerial achievement is recorded in the sending of this wireless message from an aeroplane. in flight

McCurdy

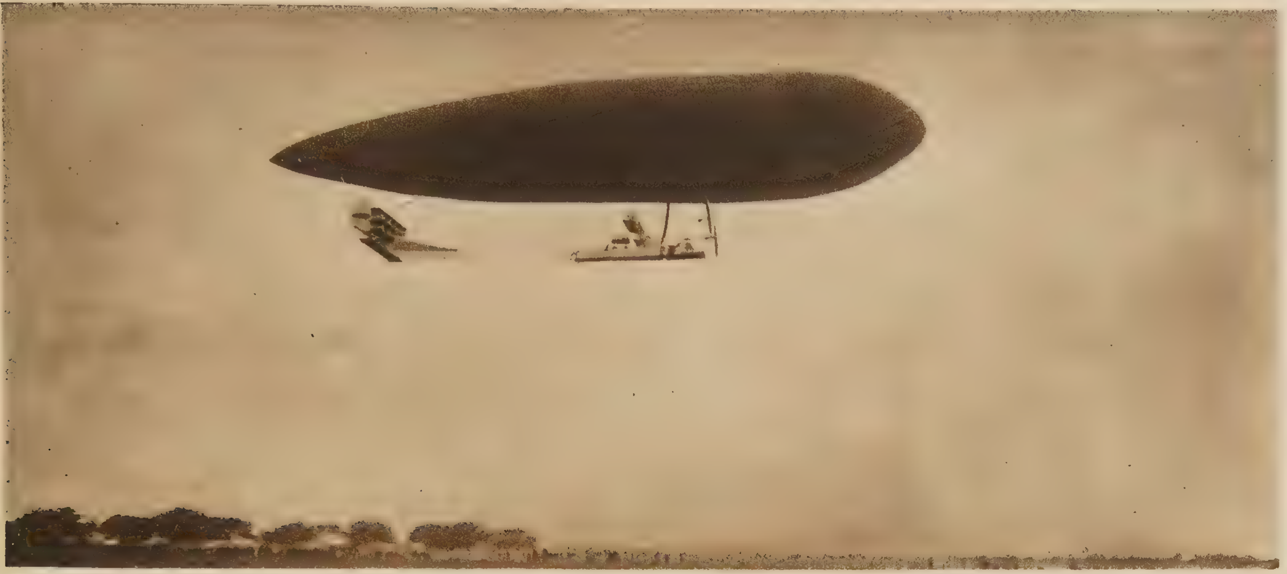
FIRST AIRPLANE FLIGHT OVER IRISH SEA (left)—Robert Lorraine, famous actor and aviator, as well known in America as in England, was first to fly an airplane over the Irish Sea. Lorraine essayed twice to cross this famous body of water, the first time (August 10, 1910) carrying but a life preserver and flying some 60 miles, 50 miles of it over salt water.

Lorraine took off from Blackpool, on the west coast of England, headed for Ireland and lost his bearings when he flew into heavy fog. He rose to 3,000 feet altitude at times, but could not get out of the fog and finally landed on the West coast, at Rhos-on-Sea, near Llandudno. He was in the air 1 hour and 33 minutes.

His second attempt (September 11, 1910) was about to succeed when he fell into the sea near the Irish coast and was rescued. He had engine trouble almost from the first after leaving Holyhead, but flew nearly 55 miles. Photograph (left) in Paul Thompson Collection.

THE U. S. ARMY'S FIRST AERIAL BOMB (below) is held by Lieut. M. S. Crissy, seated in the Army's first Wright plane at San Antonio, Texas. Philip O. Parmalee is at the controls (August, 1910). Official photograph, U. S. Army Air Corps. First airplane wireless message in Augustus Post Collection.

First AIRSHIP *to* VOYAGE *from* PARIS *to* LONDON—1910



ENGLAND'S CLEMENT-BAYARD AIRSHIP MANEUVERS WITH FRENCH ARMY—British Archives.

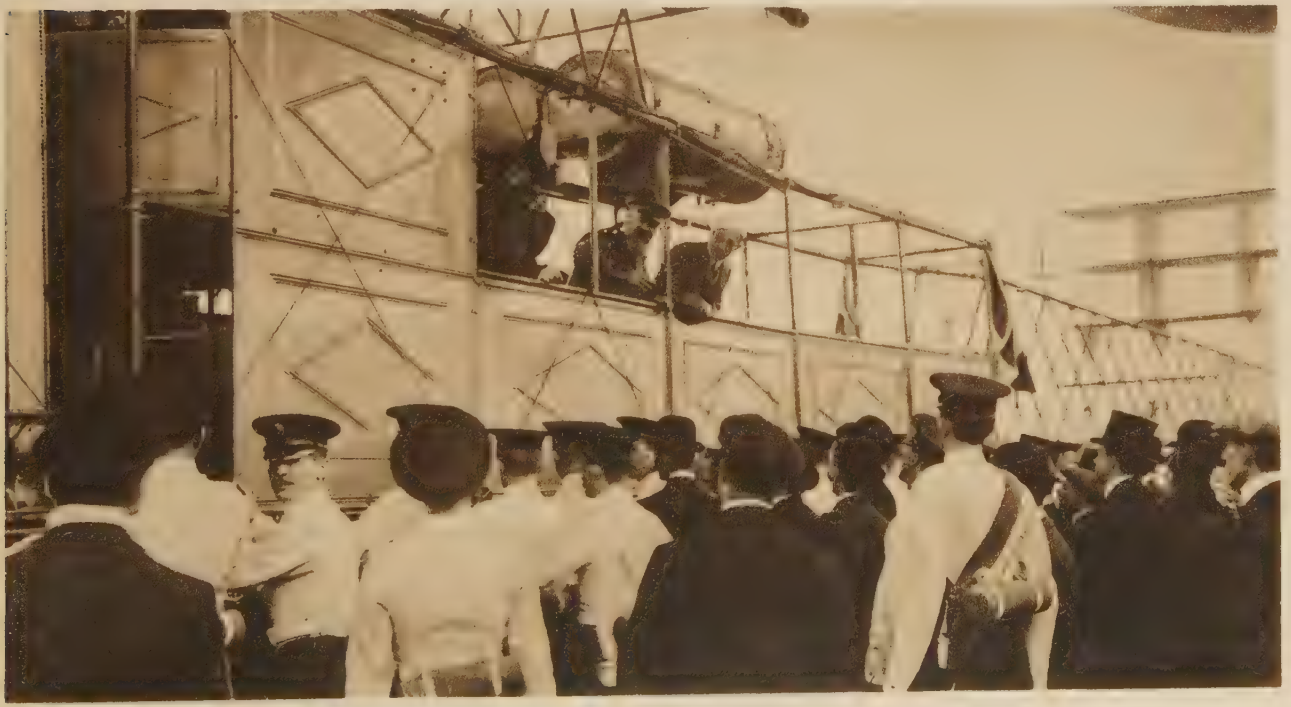
ENGLAND'S FIRST FRENCH AIRSHIP, the huge non-rigid "Clement-Bayard II," was the first airship to cross the English Channel—when she was delivered to the British Army by M. Gustave Clement, of the Clement, Bayard Company of Lamotte-Breuil, and his engineer, M. Sabathier (September 16, 1910).

Convoyed across the Channel by three destroyers, that part of her voyage was made in 45 minutes. A. P. Du Cross, M.P., of the British Parliament Defence Committee, was aboard.

Completed (April, 1910), the "Clement-Bayard II," a great ship of 290,000 cubic feet gas capacity, sailed numerous trial trips during the summer. She took part in French Army maneuvers at Picardie, to demonstrate her air worthiness (September, 1910), making a number of voyages during which she was in constant wireless communication with headquarters.

The airship covered the 242 miles from Paris to London in 6 hours, at 40 miles an hour, arrived amid the tumultuous cheers of a great throng and was quietly housed by British soldiers in the *Daily Mail* hangar at Wormwood Scrubbs.

M. CLEMENT DELIVERS "CLEMENT-BAYARD II" AT WORMWOOD SCRUBBS—(Below)
Brown Collection



AMERICA'S *Great* AVIATION MEET *at* BOSTON—1910

FAMOUS ENGLISH AND AMERICAN FLIERS COMPETE FOR $100,000
Photograph of Burgess-Wright Planes in Navy Archives and Ernest L. Jones Collection.

INTERNATIONAL EVENT witnessed by huge throngs that cheer the winners. Held by the Harvard Aeronautical Society at Squantum on Boston harbor (September 3-13, 1910), it was a brilliant society event and attracted the celebrated English and American fliers, who competed for about $100,000 in prizes. England sent Claude Grahame-White—T. O. M. Sopwith—A. V. Roe. The Americans included Glenn Curtiss—Ralph Johnstone—Walter Brookins—Charles F. Willard—Earle Ovington—Clifford B. Harmon.

Grahame-White, for England, won the sensational race around Boston Light for the *Boston Globe's* $10,000 prize, flying the 33 miles over water in 34 minutes, 1 1-5 seconds. His fast Bleriot also won the speed prize with 5¼ miles in 6 minutes.

Johnstone, for America, made the meet's duration record—3 hours, 5 minutes, 40 seconds; while Brookins flew higher than any other pilot, 4,732 feet. Johnstone and Brookins flew Wright planes. Curtiss, flying a biplane of his own about as fast as White's Bleriot, was a notable performer during the meet.

OVINGTON
About to
Fly to
BOSTON
LIGHT
Won by
GRAHAME-WHITE

PRESIDENT TAFT *Congratulates* ENGLISH VICTOR—1910

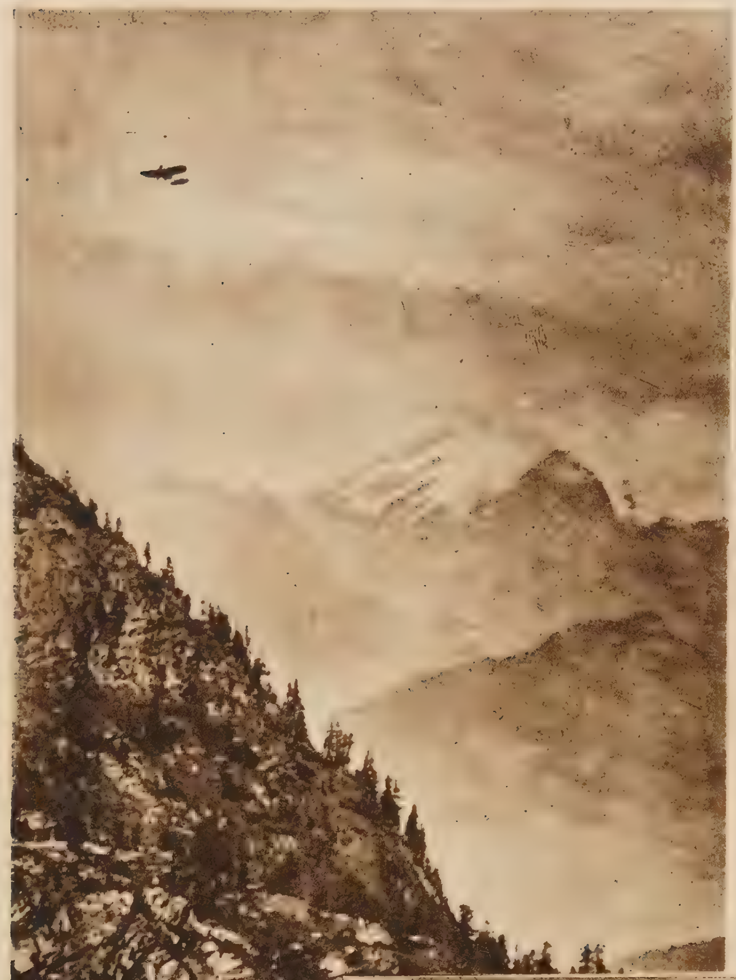
GRAHAME-WHITE HONORED BY PRESIDENT TAFT

CELEBRITIES from Boston, New York, Washington and elsewhere mingled at this Great American Aviation Meet. Flying was a purely sporting affair then (1910) and sportsmen of wealth and position took part, some of them professionally.

Among the socially prominent New Yorkers at the Boston meet were Mrs. W. Irving Twombly (left) and Mrs. Timothy L. Woodruff (below), wife of the then Lieutenant-Governor of New York State.

Mrs. Woodruff is shown watching the flying with "Tom" Sopwith, then just coming into prominence as an English flier and a few years later to be a leading manufacturer of war planes.

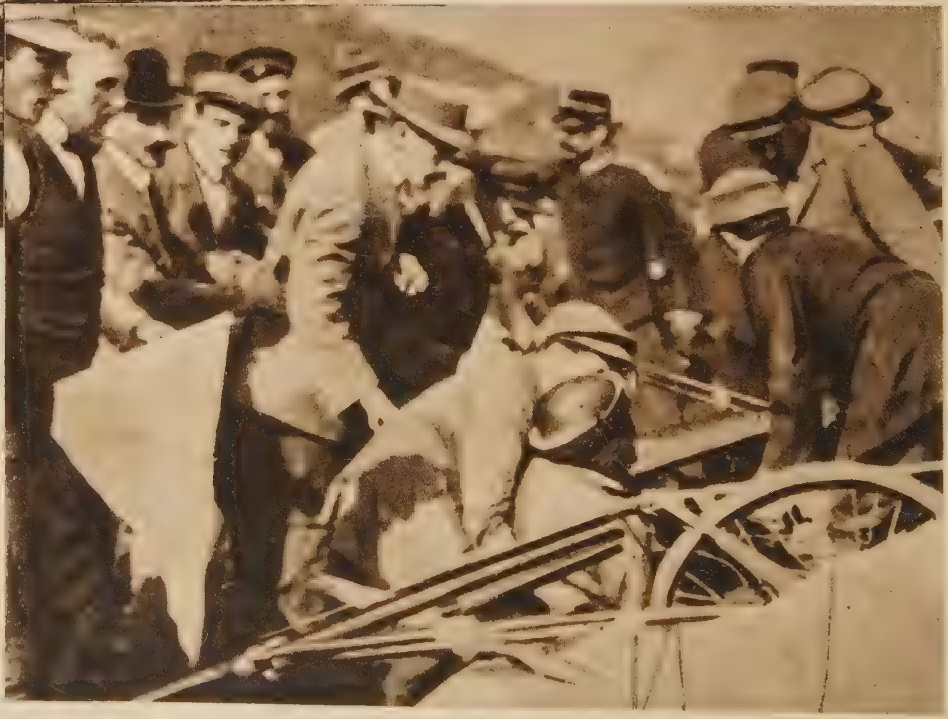
TRAGEDY *Ends First* AIRPLANE FLIGHT *Over the* ALPS—1910



GEORGES CHAVEZ startles the world by flying over the lofty Alps in an airplane (September 23, 1910)—only to crash on the Italian side and die from his injuries four days later!

Chavez, a Paris-born aviator of Peruvian parentage, had made the world's altitude record, 8,400 feet, at Issy, France, (September 8, 1910) and flew higher in crossing the Simplon Pass. He rose from Brieg, Switzerland, flying to Milan, Italy, 75 miles, for a $20,000 prize offer of the Italian Aviation Society.

After successfully soaring over the Alps in his Bleriot monoplane (left), Chavez was coming down for gasoline and oil at Domo d'Ossola, Italy, when the wind caught his plane some 30 feet up, overturned and crashed it.

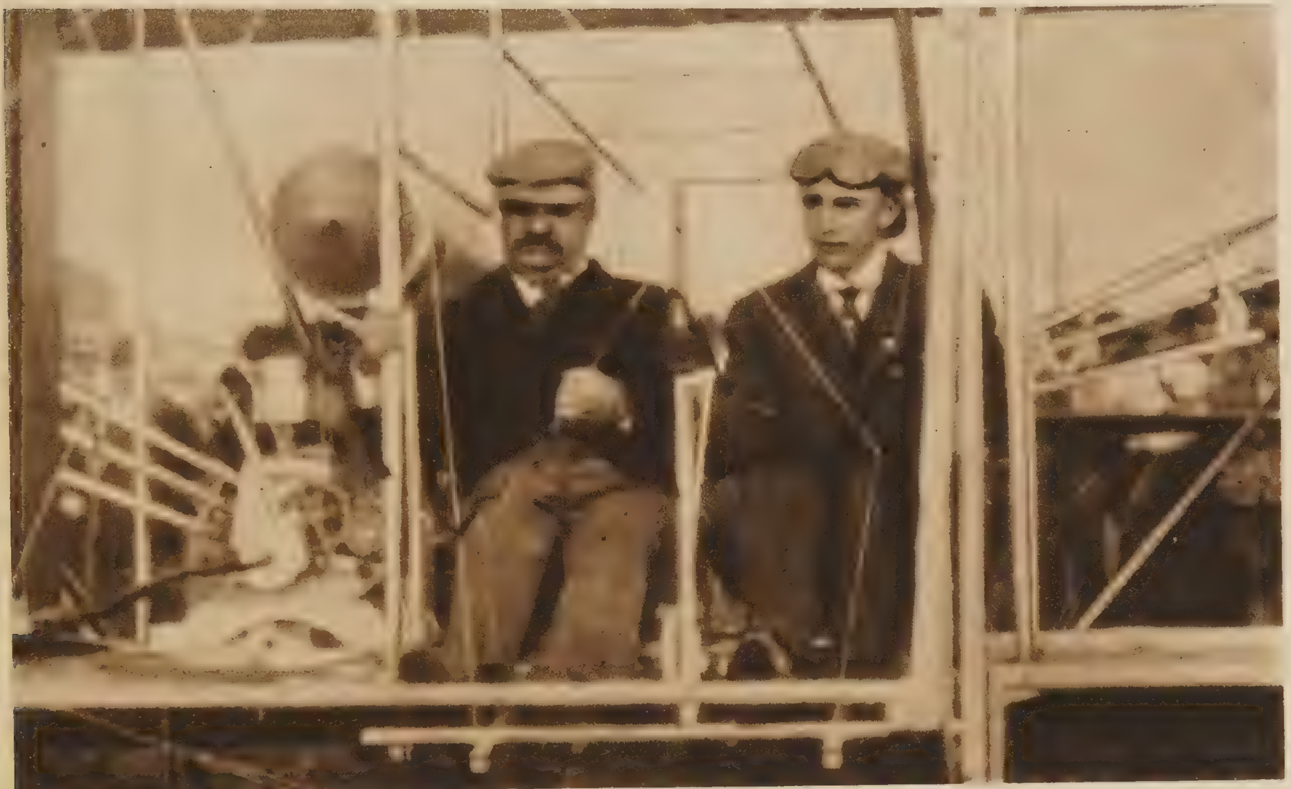


CHAVEZ CRASHES

Photograph shows him being lifted from his wrecked plane. Both legs and one thigh broken, he suffered internal injuries. Removed to a hospital after regaining consciousness—he passed away four days later.

Though he had still 50 miles to go to reach Milan, the Italian committee awarded him half the prize because of high skill in covering the really difficult and dangerous part of his undertaking. Photographs in Thompson Collection.

ROOSEVELT—*First* PRESIDENT *in Airplane* FLIGHT—1910



THEODORE ROOSEVELT BRAVES THE AIR WITH ARCH HOXSEY—At the flying meet of the St. Louis Aero Club (October, 1910) ex-President Roosevelt became the only former chief executive of the United States to fly. He went into the air with Archie Hoxsey, noted Wright flier (October 11). Photograph in Elizabeth Gregory collection.

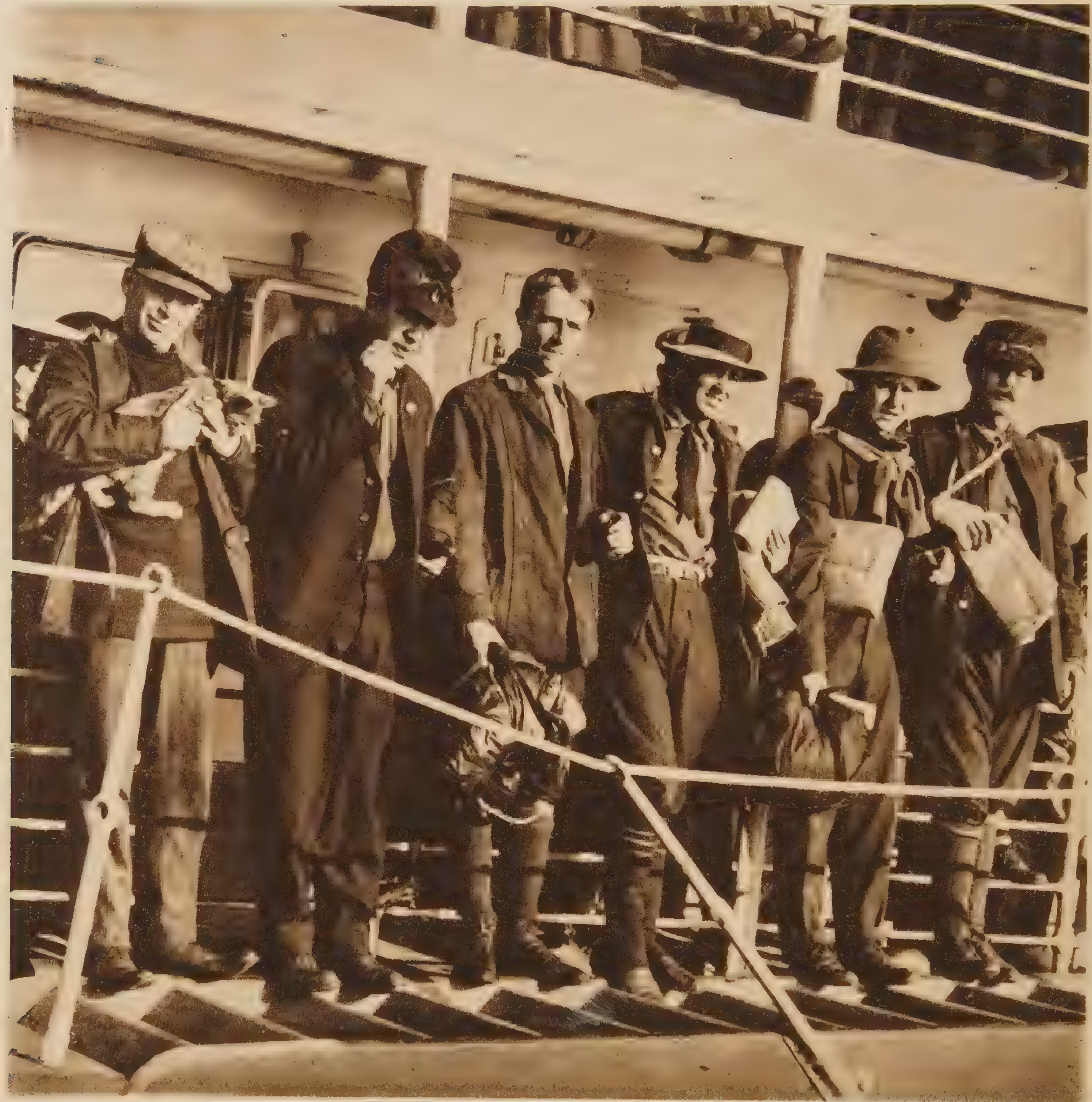
FIRST FLIGHT OVER PYRENEES—Maurice Tabuteau (right), a French flier who developed rapidly, was first to fly over the Pyrenees Mountains (September 28, 1910), from San Sebastian, Spain, to Biarritz, France, where he landed in the public square. Tabuteau did this the day after Chavez died (who had just flown the Alps).

Tabuteau had been a passenger on a noted flight by Maurice Farman earlier in the year—50 miles from Buc to Etampes, France (May 21). And he was to be the first man to fly for six consecutive hours in the air, a world's record made at Buc (October 8, 1910).

This flier won the Michelin prize for 1910 (December 30) and broke his own previous record by flying 365 miles in 7 hours, 48 minutes. The following year (1911) Tabuteau was to still further add to his laurels by breaking other world's records.

The French airman was one of four fellow countrymen who flew Bristol planes and were attached to the airplane factory established by Sir George White at Bristol, England (1910). These French fliers instructed English pilots who were afterward to make names for themselves in the Royal Flying Corps during the World War. Photograph of Tabuteau (right) in Ernest L. Jones Collection.

First ATTEMPT *to Cross the* ATLANTIC *in* AIRSHIP—1910



SURVIVORS OF FIRST TRANSATLANTIC AIRSHIP "AMERICA"—RESCUED AT SEA

WALTER WELLMAN, AMERICAN JOURNALIST, was first to attempt to cross the Atlantic Ocean in an airship (October 15, 1910). With five intrepid companions and a little gray cat as mascot, he set sail from Atlantic City in the dirigible "America", which he had used in Arctic Exploration (1909).

This was the first airship to use wireless, with which Wellman kept in communication with the land. The "America" made 250 miles on her course and was 140 miles northeast of Nantucket Island when adverse winds began to drive her in a southerly direction. She was finally picked up at sea and her crew taken off by the Bermuda liner "Trent" off the North Carolina coast, 375 miles east of Norfolk, Virginia.

This historic photograph from the Brown Collection shows the rescued group on the "Trent"; from left to right, are Melvin Vaniman, chief engineer, with the mascot "Miss America;" Albert L. Loud, assistant engineer; J. Murray Simon, navigating officer; Jack Irwin, wireless operator; John Aubert, assistant engineer, and Walter Wellman, chief of the expedition.

PART XV

WORLD EVENTS *Inaugurate* SECOND DECADE

ATTEMPTS *to* SPAN OCEANS *and* CONNECT HEMISPHERES

WAR CLOUDS are beginning to gather over the nations (1910–14). The world is soon to be thrown into the greatest cataclysm in history. Out of the vortex is to rise a new "World in the Air."

George V. ascends the throne of the British Empire; Poincare comes into power in France; Woodrow Wilson becomes President of the United States; Kaiser Wilhelm rules over the German Empire. The Republic of Portugal is established; the Union of South Africa is formed; China is proclaimed a republic; the Diaz regime falls in Mexico; the Balkan War breaks out.

These pre-war days are filled with the spirit of adventure; human courage and daring seem to be steeled for the events to come. The First Attempt to Cross the Atlantic Ocean in an Airship is made by Wellman (October 15, 1910), who actually cruises 1,008 miles before being rescued at sea. The First Airplane Flight into the Capital at Washington is made by Grahame-White (October 14, 1910); American Balloonists establish a new world record when Hawley and Post voyage 1,171 miles in 46 hours, from St. Louis to the wilds of Quebec (October 17–19, 1910), in a race between Germany, Switzerland, France and the United States.

France, England and America meet in a Great Aerial Tournament at Belmont Park (October 22–31, 1910), breaking all world records; Latham flies over the City of Baltimore (November 7, 1910); the First Flight from a Warship is made by Ely (November 14, 1910); Johnstone, famous Wright aviator, is killed at Denver (November 17, 1910); more than 1,200 flights are made during this year by the Wright fliers.

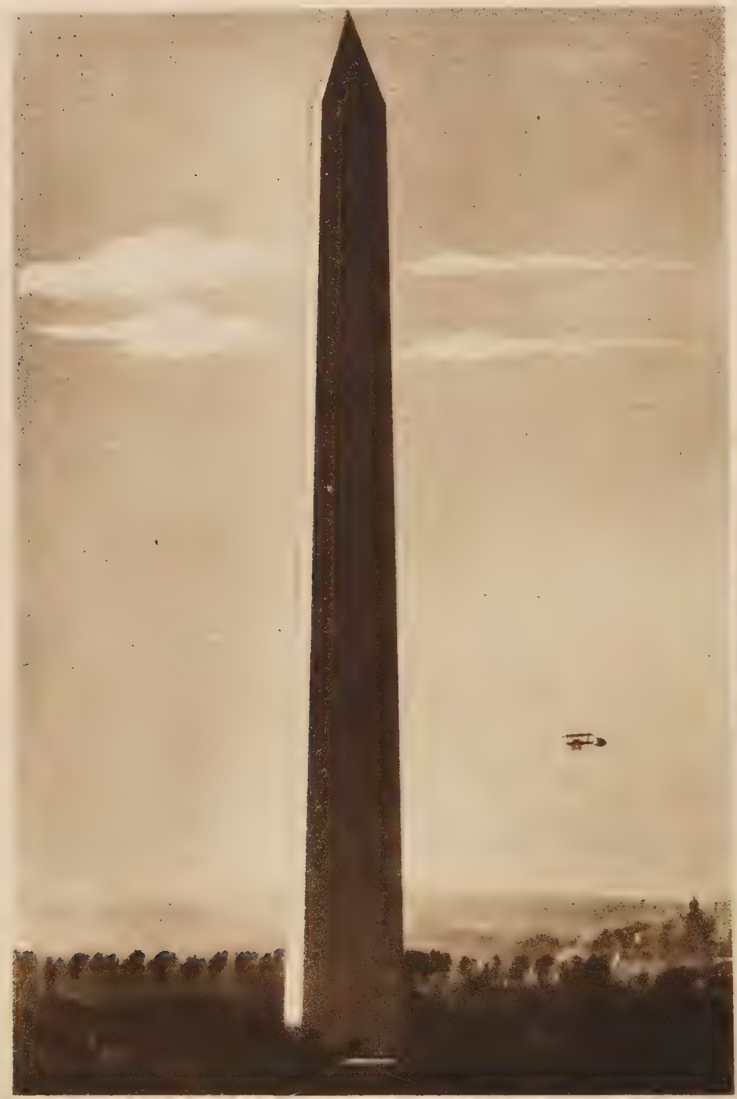
Octave Chanute, one of the world's greatest scientists in aeronautics, dies at Chicago (November 23, 1910); Hoxsey flies over Mount Wilson in California to an altitude of over 10,000 feet and is killed in a crash (December 31, 1910); Moisant is killed in a crash at New Orleans on the same day.

First Successful Flights of a Hydro-Aeroplane in America are made by Curtiss at San Diego (January 26, 1911); First Airplanes in Warfare in world's history used during Mexican Revolution (February, 1911) by Foulois, Hamilton and Harkness. In the same year aviators operate with Spanish forces in Morocco. Great flights are made in Europe between Paris-Madrid; Paris-Rome; Paris-London (May—July, 1911); First Flight over Niagara Falls and through gorge (June 28, 1911) made by Beachey.

First Flight Boston to Washington (June 30—July 11, 1911) and First Flight St. Louis to New York (August 14–25, 1911) are made by Atwood; First Trans-Continental Flight from New York to California (September 17—November 4, 1911) by Rodgers. Amundsen discovers the South Pole (December 14, 1911) by land; 18 years later, Byrd, an American, is to make the first flight over the bottom of the world in an airplane.

First Woman to make an Airplane Flight across the English Channel is Harriet Quimby, an American (May 26, 1912); Wilbur Wright, co-inventor of the airplane, dies in Dayton (May 30, 1912); First Airplane Flight across the Mediterranean Sea is made by Garros (September 23, 1913); and the First Attempt to Fly across the Atlantic Ocean is about to take place (1914) when the nations are thrown into catastrophe by the World War.

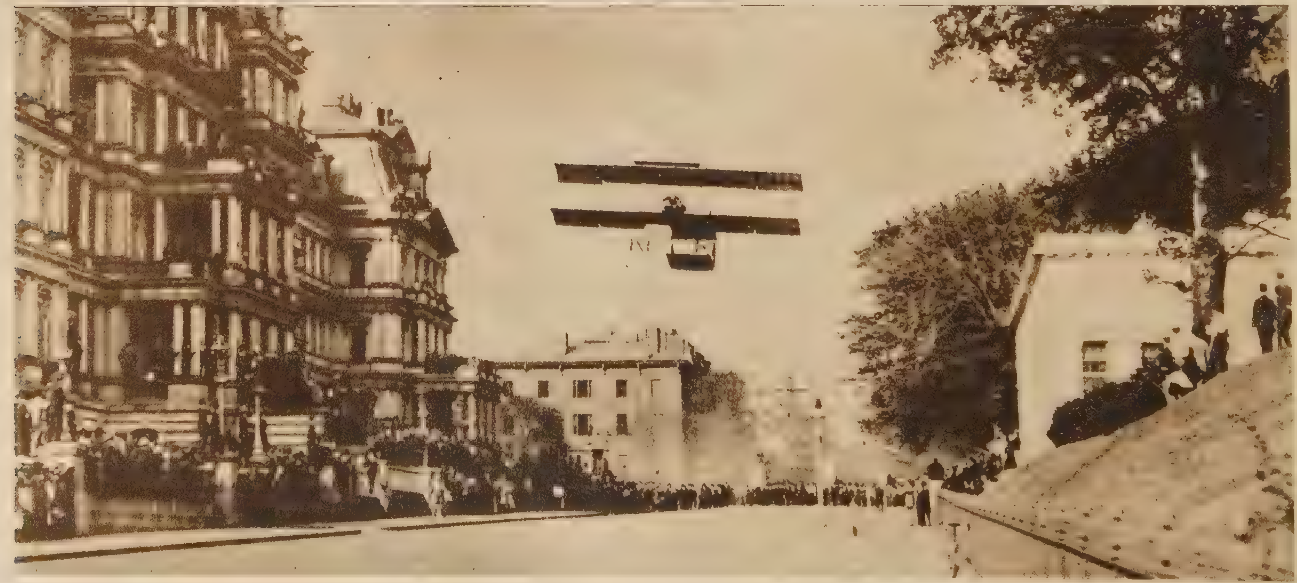
First AIRPLANE FLIGHT *into* CITY *of* WASHINGTON—1910



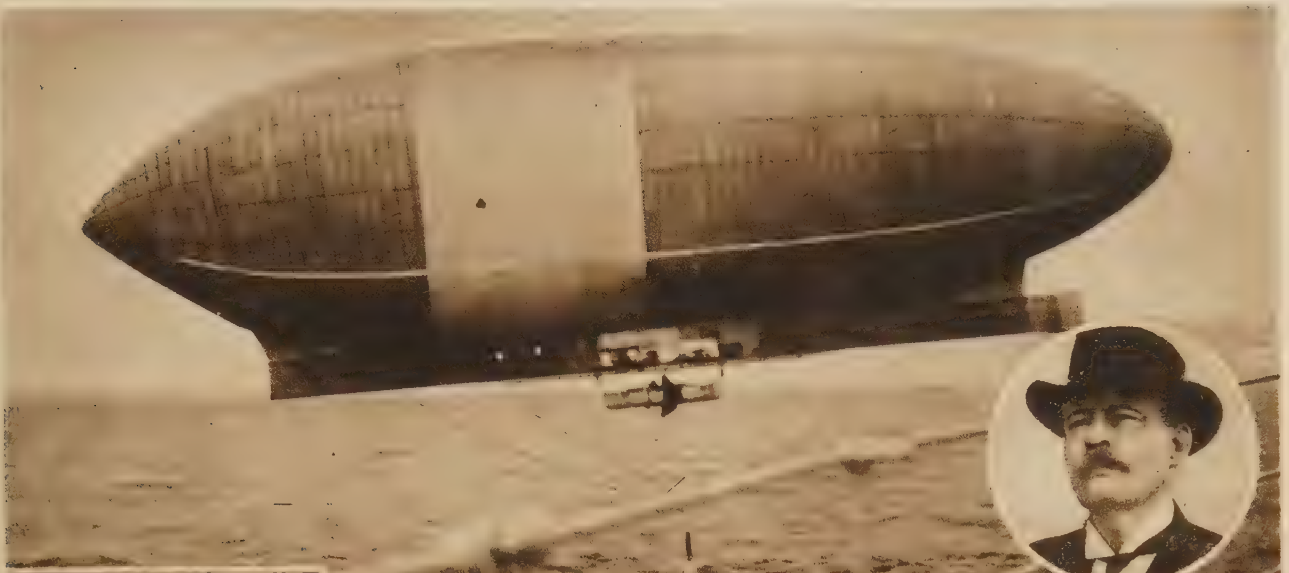
GRAHAME-WHITE
Flies
Over
NATION'S
CAPITAL

THIS FAMOUS ENGLISHMAN flew the first airplane into the city of Washington (October 14, 1910). He piloted his Farman biplane from the Bennings Race Track, circling the Washington Monument and landing in the street between the State, War and Navy Building and the White House office building, where he was greeted by cheering thousands.

Photograph (left) of Grahame-White flying around the Washington Monument is in the official records of the Army Air Corps. The airman about to land (below) is in Ernest L. Jones Collection. Portrait in the Thompson Collection.



Airship "AMERICA" *Cruising Over* ATLANTIC OCEAN—1910

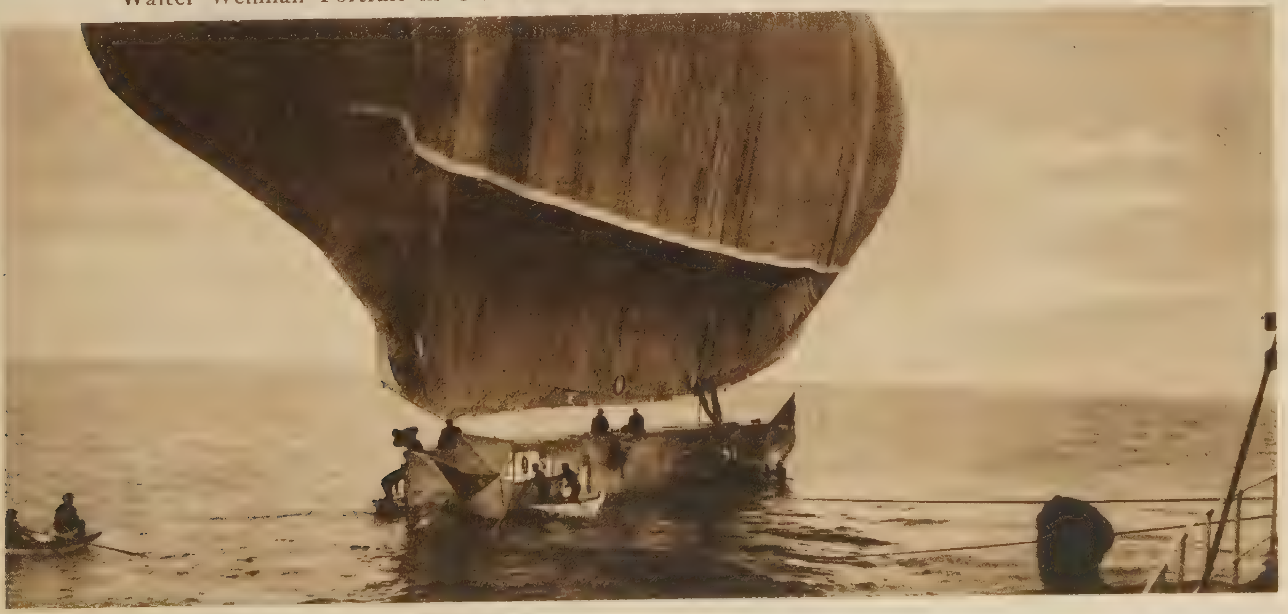


WELLMAN'S "AMERICA" actually cruised by air 1,008 miles—breaking the world's record for the longest airship mileage in a single voyage—(October 15, 1910,)—but three-quarters of this was not toward Europe. The transatlantic airship was, next to the Zeppelins, the world's largest dirigible. Built in Paris, it was 228 feet long, with a 156-foot car and a 30-foot lifeboat suspended below.

The "America" started to cross the ocean from Atlantic City at 8 A.M. (October 15) and before noon she had developed engine trouble.

Running at a low altitude that night, the "America" almost met the unique fate (for an airship) of being rammed by a schooner. Her 2-ton drag rope ("equilibrator") with gasoline drums fastened to it, strained as it leaped from wave crest to crest. But, for the danger that the lifeboat would be stove in by this, the party would have left the ship some time before sighting the "Trent," which rescued them.

WALTER WELLMAN'S AIRSHIP RESCUED IN MIDOCEAN—Photograph in Brown Collection
Walter Wellman Portrait in Underwood Collection—Vaniman with Mascot "Miss America."



AMERICAN BALLOONISTS *Establish* WORLD RECORD—1910

HAWLEY AND POST READY TO GO

Photograph in Brown Collection

THE GORDON BENNETT BALLOON CUP (1910) was won by Alan R. Hawley and Augustus Post, with a flight of 1,171.13 miles in 46 hours—from St. Louis to Lake Tschotogama in the wilds of Quebec.

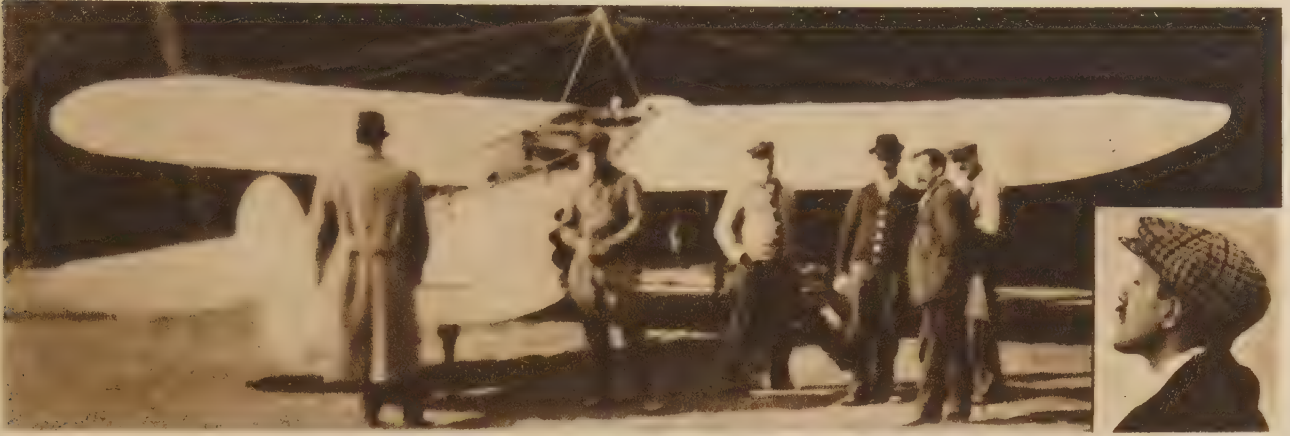
An anxious world waited for more than a week while they made their way out of the Canadian wilderness, with an American balloon distance record which has stood for years.

In the "America II" they left St. Louis (October 17, 1910) among ten starters. They were last sighted the next day passing over Thompsonville, Michigan.

Landing at 3.45 P.M. (October 19) in the Peribonka River forest, 50 miles east of Chicoutimi, they plodded on their way for four days until they met trappers who brought them to St. Ambroise village in canoes (October 26).

AMATEUR BALLOON PILOTS—With Leo Stevens (1910). Left to right—William F. Whitehouse, Henry Whitehouse, Leo Stevens and A. Holland Forbes.

Great INTERNATIONAL AIR *Tournament in* AMERICA—1910



COUNT JACQUES DE LESSEPS AND HIS WINNING BLERIOT (above)—Photograph in the Jones Collection—Portrait of Count de Lesseps in International Collection. The French airman won the grand prize of the Belmont meet, the Thomas F. Ryan $10,000 for the flight around the Statue of Liberty.

THE GREAT AERIAL TOURNAMENT at Belmont Park, Long Island, (October 22-31, 1910) was the outstanding international event in aviation.

Le Blanc, Latham, De Lesseps, Auburn, Garros, Audemars and others represented France—Grahame-White, Radley, Ogilvie, McCardle were among the English fliers participating—Curtiss, Moisant, Armstrong Drexel, Brookins, Coffyn, Hoxsey, Ralph Johnstone, Hamilton, La Chappelle and other skilled pilots flew for America.

The sensational "Statue of Liberty Race" for the Thomas Fortune Ryan $10,000 prize was won by the Count de Lesseps. Claude Grahame-White beat him home, but was disqualified for fouling the initial pylon.

Grahame-White had won the Gordon Bennett $5,000 speed contest—in which Alfred Le Blanc broke every world's record from 5 to 100 kilometers, but crashed at the finish. Johnstone shattered the world's record for altitude by flying to a height of 9,714 feet.

Allan A. Ryan (right, with his two little daughters) as chairman of the Committee was mainly responsible for the great success of the famous International meet. This Ryan photograph and "thrill seekers" (below) are deposited in the Underwood Collection.

ENGLISH—FRENCH—AMERICANS *Race in the* AIR—1910

THE ENGLISH FLYING TEAM at Belmont Park (below) presents Alex Ogilvie, James Radley, Claude Grahame-White, A. McCardle.

These were the stars of the English flyers of the time, along with T. O. M. Sopwith and Geoffrey de Haviland. The pioneer Cody was flying with the British Army. He never came to his native America to fly. Grahame-White continued to be a prominent figure in aviation in England and to compete in America for years to come. Photograph in International Collection.

WRIGHT FLYING TEAM at Belmont Park, (above) presents Frank Coffyn, Walter Brookins, Archie Hoxsey, Alfred La Chappelle.

These stars were the first pilots taught by Wilbur Wright. Ralph Johnstone (foot of page, right) and Philip Parmalee were also in the original group.

Johnstone was killed in a crash (November, 1910) and Hoxsey met death at Los Angeles on the same day Moisant was killed at New Orleans (December 31, 1910). Photograph in the Paul Thompson Collection.

COURTLAND FIELD BISHOP CONFERS WITH J. ARMSTRONG DREXEL (below, left)—Mr. Bishop was then President of the Aero Club of America. Photograph in International Collection. We also see Ralph Johnstone about to make a startling altitude record (below, right). Photograph in Brown Brothers Collection.

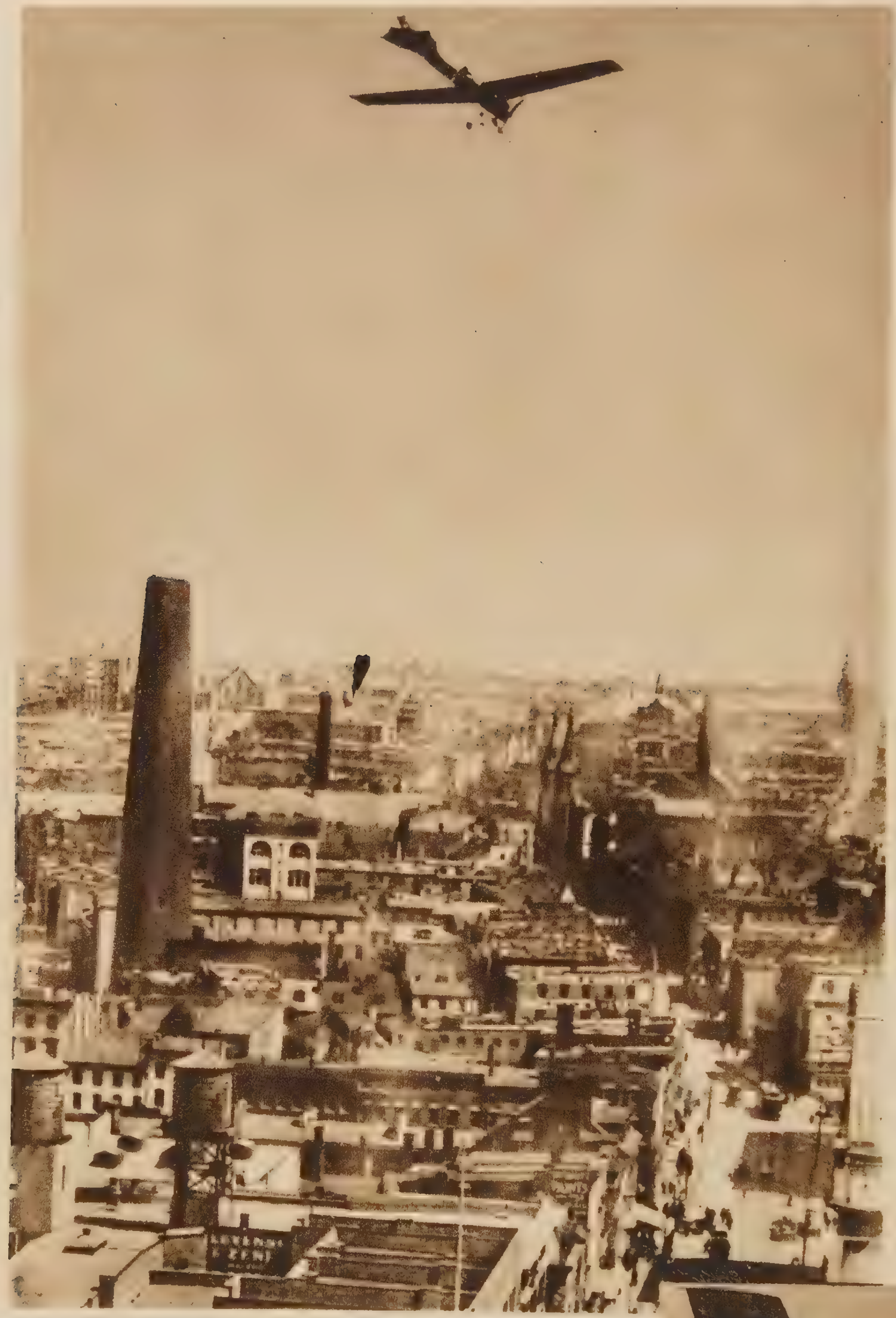
FAMOUS PERSONAGES *at* BELMONT AIR MEET—1910

A SOCIETY SPORTING EVENT of outstanding importance was this great International Aviation Tournament at Belmont Park. (October 22-31, 1910). Prominent people gathered from all over America to watch the fliers.

We see Clarence Mackay of New York (above); Miss Eleanora Sears of Boston (left); Lieutenant Governor Timothy L. Woodruff of New York State (upper right); Harold McCormick of Chicago (right). Photographs in Underwood Collection.

Count de Lesseps (below left) stands with John Barry Ryan, son of the donor of the $10,000 prize for the flight (center), and Claude Grahame-White (right) watching the swift rush of John B. Moisant, hurtling back from the Statue of Liberty. Photograph by Charles Trampus in Thompson Collection.

First GREAT "OVER CITY" *Flight in* AMERICA—1910



LATHAM, noted Frenchman, was flying in the aviation meet at Halethorpe in the Baltimore suburbs, as was Count Jacques de Lesseps. Both had been at the International Aviation meet at Belmont Park, New York. De Lesseps made a single try for this *Baltimore Sun* prize, but weather conditions were against him. Before he could try again, Latham had made it.

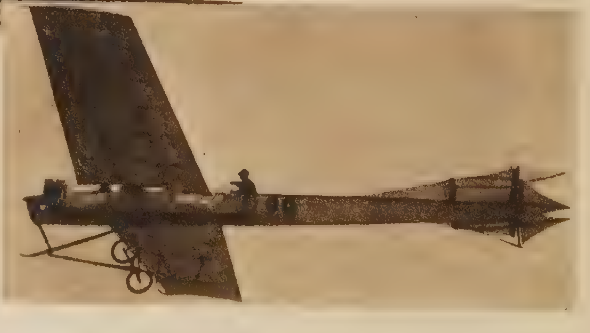
Flying over the crowded streets of a great city had not been done at this stage of aviation. Fliers had flown over small portions of cities —even Paris, Rome, Berlin and San Francisco—but as a matter of necessity rather than choice. Latham, who had twice essayed the English Channel flight without success, was a noted altitude flier with early world's records. He was the first to deliberately embark on a flight over the most populous sections of a large city. It was then believed that the heated air currents rising from city streets made over-city flying exceedingly dangerous.

Latham is shown (left) directly over the center of Baltimore at an altitude of 2,500 feet. Photograph by Mrs. C. R. Miller. Close-up in his Antoinette is in the Vivian Collection.

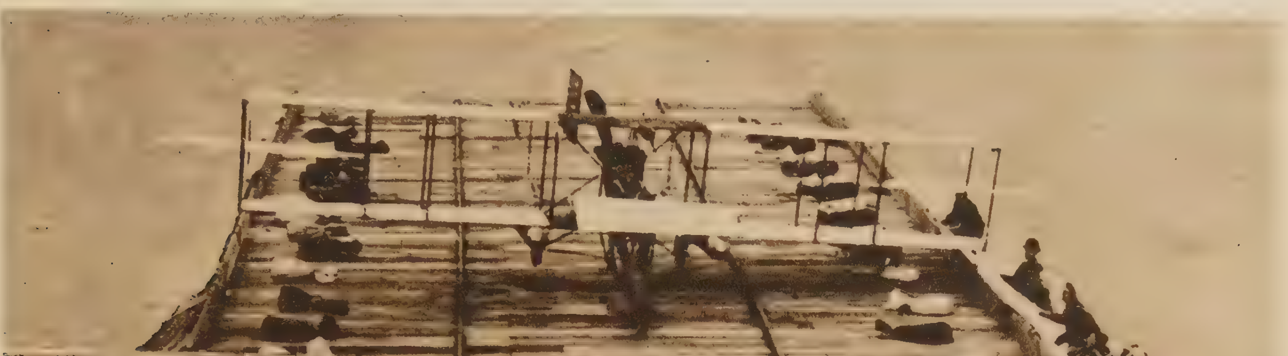
FIRST OVER-CITY FLIGHT TO WIN PRIZE

BALTIMORE holds this historic distinction. The flight was made by Hubert Latham of Paris above the city of Baltimore (November 7, 1910). In his Antoinette monoplane the French flier flew directly over the Maryland metropolis for close to an hour to win the $5,000 prize offered by the *Baltimore Sun*.

More than 500,000 gazed spellbound as the intrepid airman soared half a mile high overhead the downtown business district and the factories and homes of the Southern city.

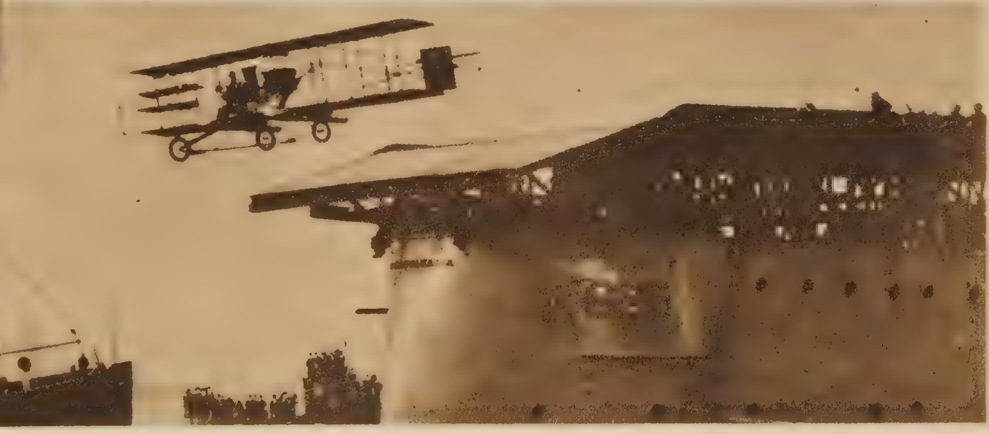


First FLIGHT *from* SHORE-to-SHIP *in* PACIFIC—1911



ELY LANDS ON THE U. S. CRUISER "PENNSYLVANIA" (above)—Official Photographs of United States Navy. He leaves the "Pennsylvania" to fly ashore (below).

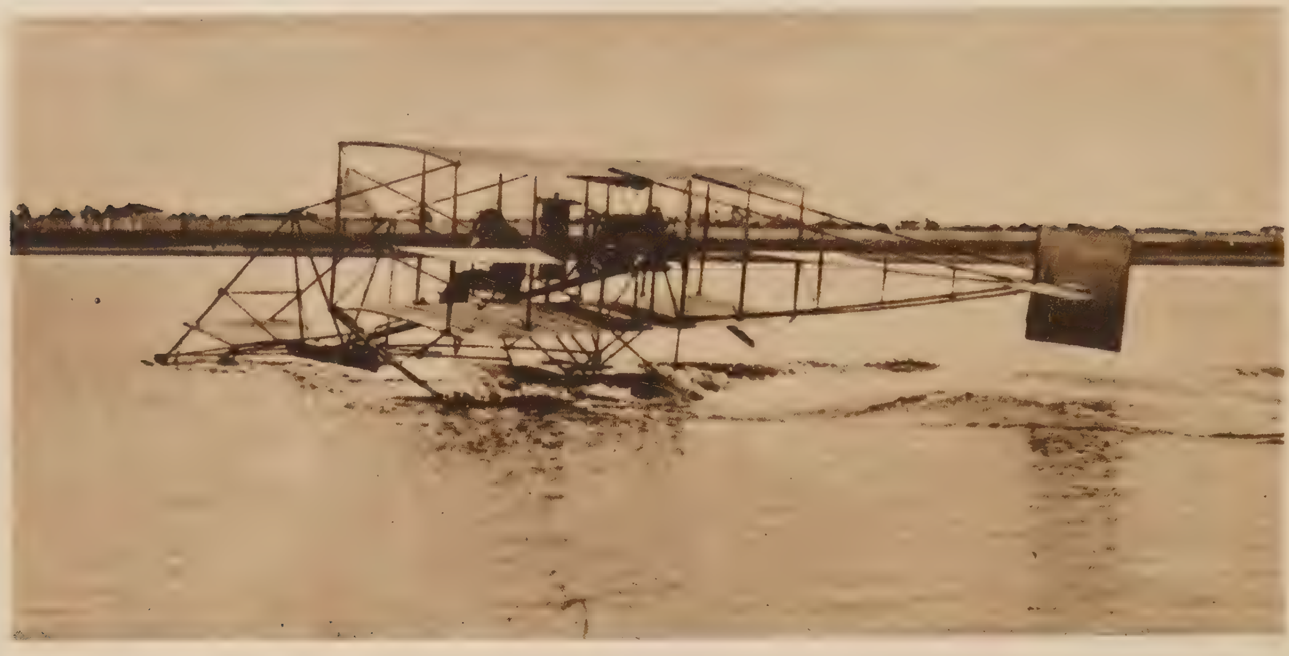
Eugene Ely (left), noted Curtiss flier, was first to fly from shore to ship and from ship back to land (January 19, 1911). He performed this remarkable feat in flying from the Presidio in San Francisco to the U. S. Cruiser "Pennsylvania" and landing on a platform little wider than his plane exactly where he intended—at 40 miles an hour. Later, he took off from the ship and flew back to land. Uncle Sam's Navy cooperated.



JEAN BIELOVUCIC, Peruvian airman, was first to fly the lofty Alps in safety. His flight from Brigue, Switzerland, to Domodossola, Italy, was made in 26 minutes (January 25, 1911). His friend, Georges Chavez, had first made this flight (September, 1910) in 49 minutes, but crashed on landing and died from his injuries. Photograph (below) shows Bielovucic about to start from Brigue.

JEAN BIELOVUCIC
Youthful Peruvian Who Flew in France—Daring Airman who was Maker of World's Altitude Records.

CURTISS *in His* "FLYING FISH" *on the* PACIFIC—1911



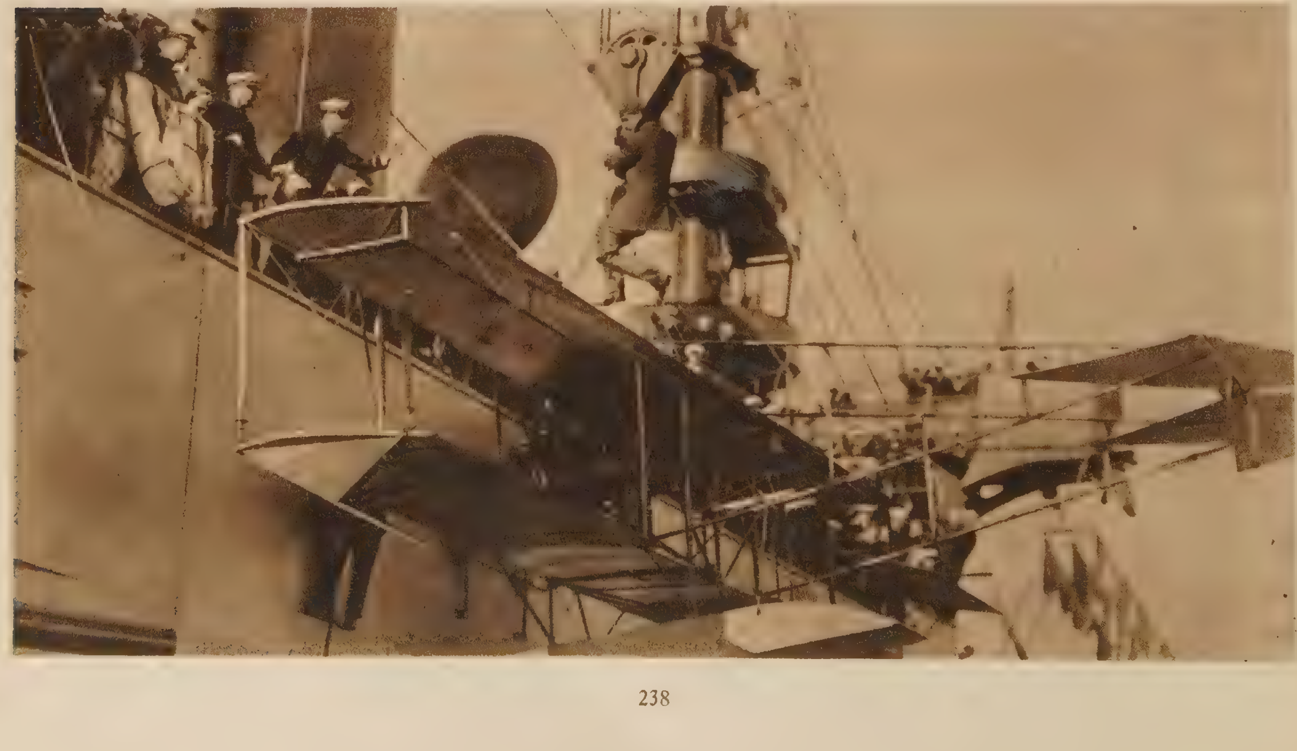
"FLYING FISH," FIRST CURTISS HYDRO-AIRPLANE AT SAN DIEGO—Acme Collection.

GLENN H. CURTISS is the "Father of the Hydro-airplane, or Flying Boat." He put pontoons on the airplane and flew it at San Diego, California (January 26, 1911, and thereafter). Curtiss was first in the world to successfully take off from the water's surface and land thereon at will.

Fabre, French airman, first rose from water (1910), but he could not land on its surface. Two years before (1908) we have seen Curtiss convert the "Red Wing" into the "Loon," the world's first seaplane, by putting on pontoons. But the "Loon" would not fly. At San Diego Curtiss, aided by Lieut. T. G. Ellyson flew the "Flying Boat" for the Navy.

Curtiss sent word to Capt. Charles F. Pond of the U. S. Cruiser "Pennsylvania," then at San Diego, that he would visit him in a "Flying Boat" (February 17, 1911). "Come on over," replied Capt. Pond. Curtiss landed on the bay's surface and he and his plane were hauled aboard by the ship's crane. Capt. Pond is shown (below) greeting the aviator.

CURTISS AND HIS FIRST "FLYING BOAT" HOISTED ABOARD WARSHIP—Jones Collection.



First FLIGHTS PARIS—MADRID—ROME—LONDON—1911

EUGENE RENAUX (left), noted French airman, won the Michelin Grand Prize (March 7, 1911). He performed the remarkable feat of flying from St. Cloud to land on the Puy de Dome—a little plateau 150 yards square—in imminent danger of smashing up against the mountain or diving over into the 4,500-foot gulf beneath.

CLASSIC CROSS-COUNTRY AIR RACES in Europe take place (1911), when France leads the world with 353 airplane pilots; England is second with 57; and Germany has 46. Louis Bleriot holds Certificate No. 1 in France. Glenn Curtiss, who is No. 1 in America, has No. 2 in France.

We meet here some French airmen who are winning air trophies: Jules Vedrines (right)—Roland Garros (below, left)—"Andre Beaumont" (below, right) who in reality is Lieut. Jean Conneau of the French Army. Vedrines is being congratulated by King Alphonse of Spain on winning the $30,000 Prize in the Paris-Madrid Air Race (May 22-26, 1911).

Garros won the $100,000 Paris-Rome Race (May 28-June 15, 1911) in which he, Beaumont and Vidart (in that order) were the only finishers out of 12 starters. Beaumont won the European Circuit Race (June 18-July 7, 1911) with $32,330, which started from Paris before 700,000 spectators. The route even took in London and a round trip across the English Channel. Photographs in the Paul Thompson Collection.

CHARLES T. WEYMANN, daring American aviator, went to England and won the Third Gordon Bennett Cup Race for airplane speed (July 1, 1911). Weymann pushed his plane up to an average speed of 78.77 miles an hour on a 94-mile course.

Curtiss had won the First Gordon Bennett Cup at the World's First Aviation Meet at Rheims (1909) with 47 miles an hour, and Grahame-White the second at Belmont Park (1910) with 61.3 miles an hour.

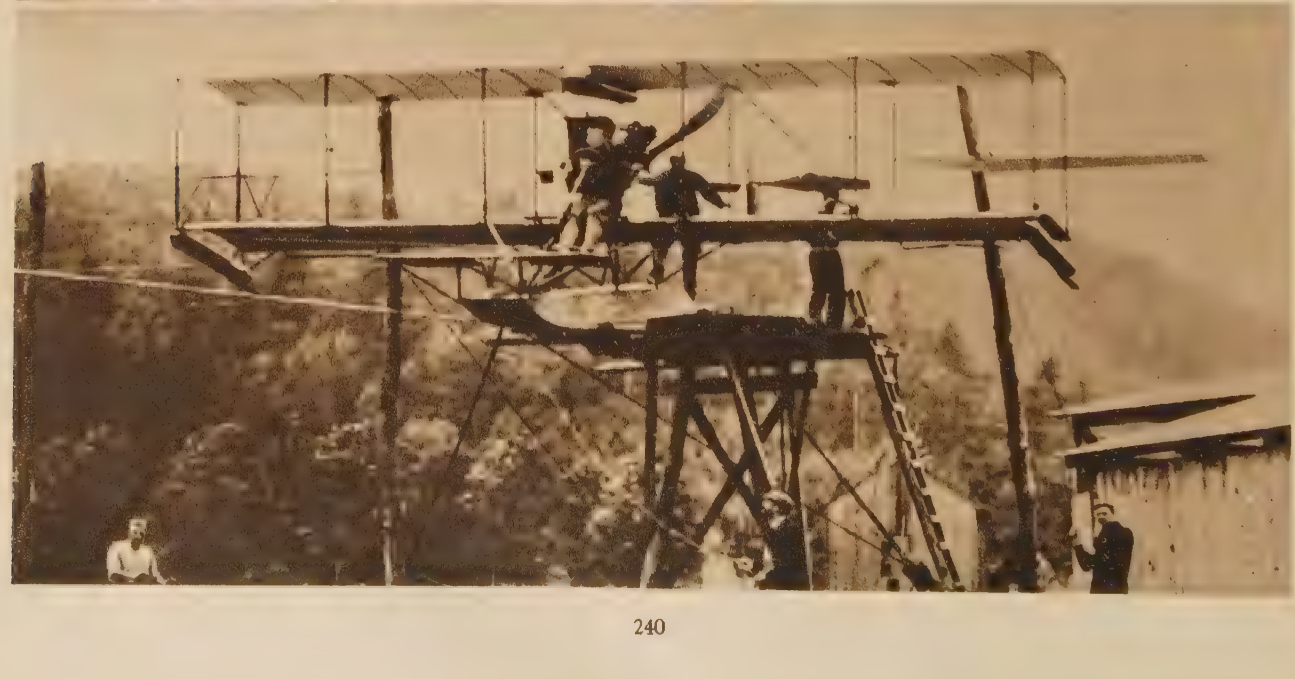
In this third Gordon Bennett Race, with six starters, four stayed to the finish—Weymann, the only American; Ogilvie of England; Nieuport and Leblanc of France.

The photograph (left) shows Weymann, after winning, standing beside Courtland Field Bishop, President of the Aero Club of America (right), who shared the honors for this country.

LIEUTENANT T. G. ELLYSON, of the United States Navy, (below) was Curtiss' first seaplane pupil at San Diego. He assisted in the development of the "Flying Boat" and worked out a novel method of launching from a taut wire at Hammondsport, N. Y. (Summer of 1911).

A platform, 15 feet high, was erected near the shore of Lake Keuka and a wire cable 250 feet long stretched to a spile out in the lake. In the official United States Navy photograph (below) we see Lieut. Ellyson as he is about to start down the wire.

This method of launching proved entirely successful and had its bearing on the seaplane catapult soon to come. The plane gathered headway as it slid down the cable and soared gracefully into the air to fly over the lake.



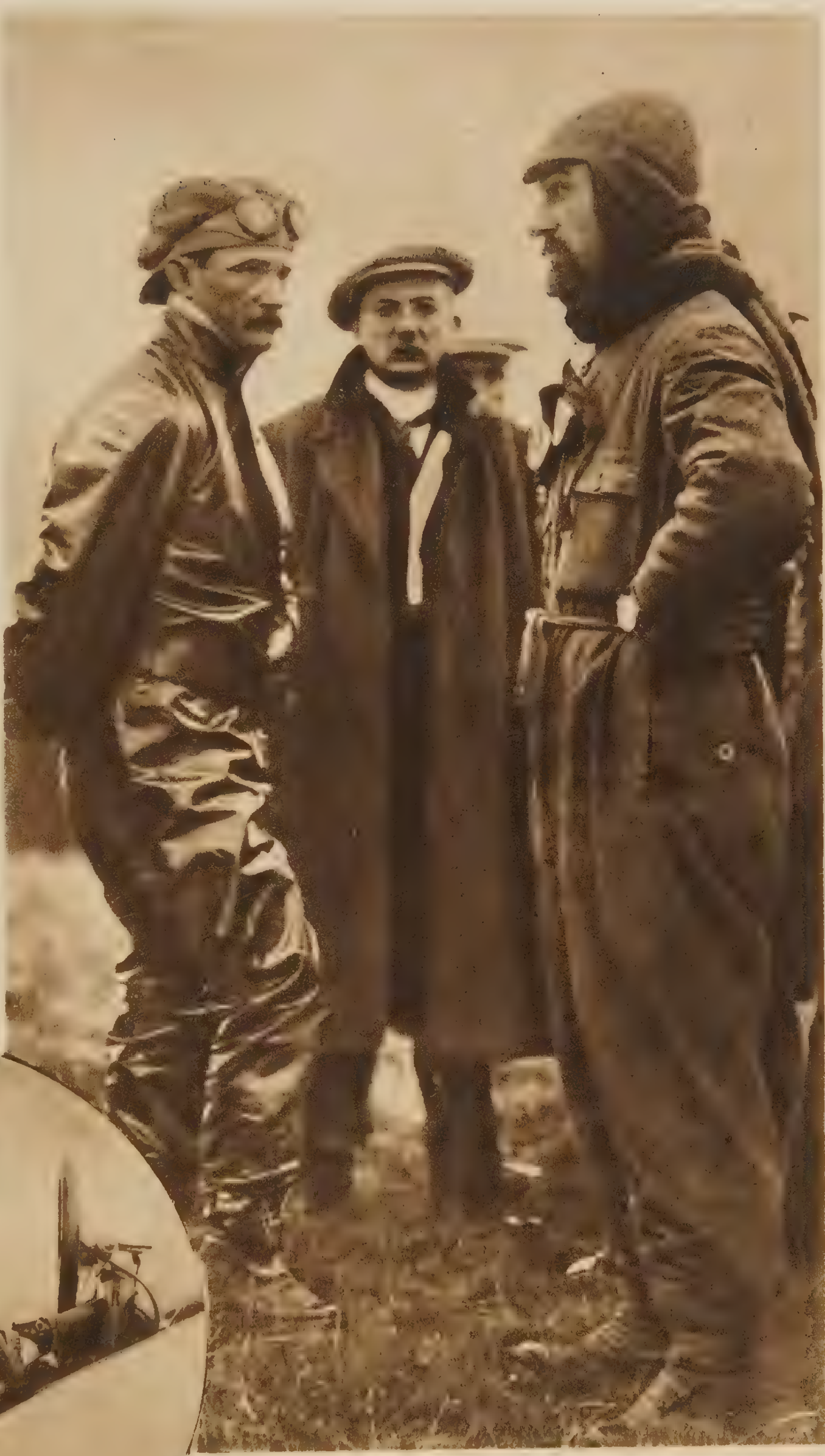
FRANCE *Wins* GREAT CIRCUIT *Race—1,010 Miles*—1911

VEDRINES AND BEAUMONT fought a remarkable aerial contest, disregarding perilous weather conditions and other difficulties, in the Great Circuit of England Air Race of 1,010 miles for the *London Daily Mail's* $50,000 prize (July 22-26, 1911).

Beaumont won in 22 hours, 28 minutes, 18 seconds, with Vedrines just over an hour behind. The only other competitors to finish, out of eighteen starters, were James Valentine, Englishman, and S. F. Cody, American; they took four and five times as long as the two Frenchmen.

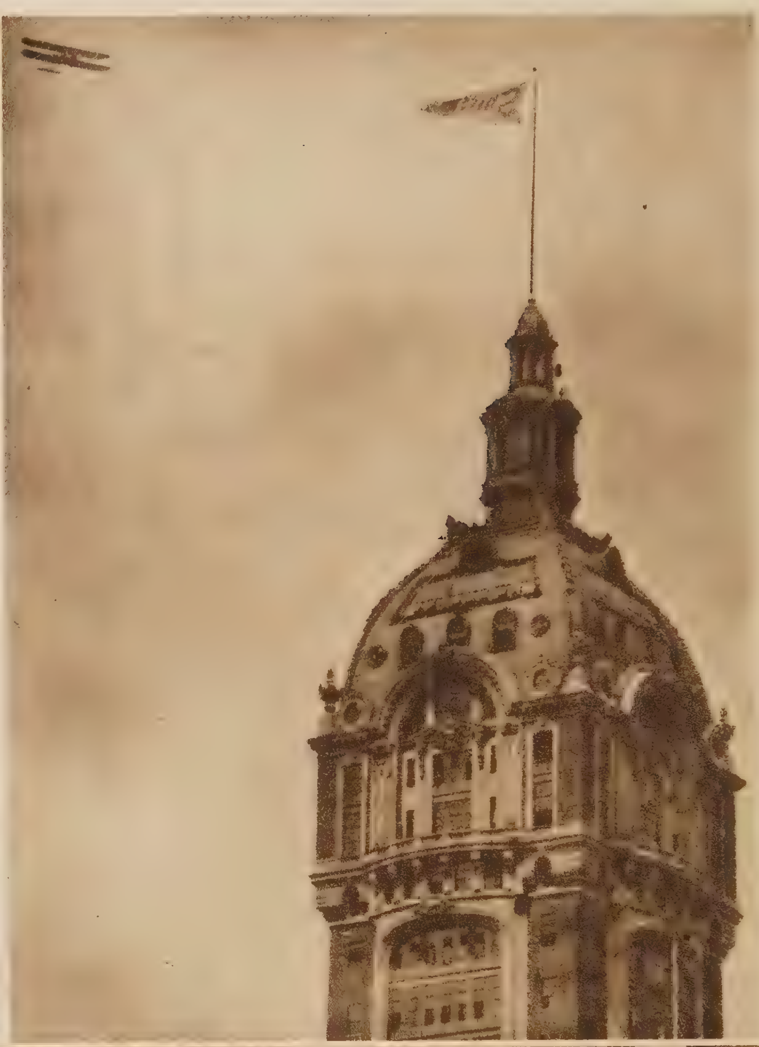
The race started at Brooklands, went up the east coast of England to Edinburgh, Scotland, then to Glasgow and down the west coast via Manchester, Bristol, Exeter, Salisbury, Brighton and back to Brooklands. The longest single flight scheduled was 182 miles, from Hendon to Harrowgate.

Of the eighteen starters all but one finished the first section of 20 miles, from Brooklands to Hendon; but only five reached Edinburgh, 343 miles farther on, which was made in three jumps. The fifth aviator, G. W. Hamel, dropped out at Glasgow, 108 miles away. We see Vedrines and Beaumont in consultation with a local race official at Stirling, Scotland, in this photograph from the Brown Collection.



JAMES VALENTINE (left) was the only Englishman to finish in the Circuit of England Classic. The two French fliers were so far superior that no other airman had a chance in the race. And the following year (September 9, 1912) Vedrines was to startle the world with a flying speed of 105 miles an hour in winning the fourth Gordon Bennett Cup at Chicago.

First FLIGHT NEW YORK *to* CALIFORNIA—*30 Stops*—1911



HARRY N. ATWOOD, of Boston, broke the world's airplane record for cross-country distance (August 14-25, 1911), flying from St. Louis to New York—1,266 miles in 28 hours, 53 minutes, with eleven stops. Atwood had broken the American record (June 30-July 11), flying from Boston to Washington, 461 miles, in 17 hours, 12 minutes, flying time. He is shown (above) in his plane. We see him circling the Singer Tower in New York (right). Photographs in Brown Collection.

CALBRAITH P. RODGERS, of New York, then broke all records (September 17-December 10, 1911) by the *First Transcontinental Flight* from New York to Long Beach, California—4,231 miles with 30 stops en route. His elapsed time was 49 days, and his actual time in the air, 3 days, 10 hours, 4 minutes. Rodgers is shown (below) with Mrs. Rodgers at Mineola, just before starting. Photograph in the Horace B. Wild Collection.

FIRST AIR MAIL FLIGHTS *in the* WORLD—1911

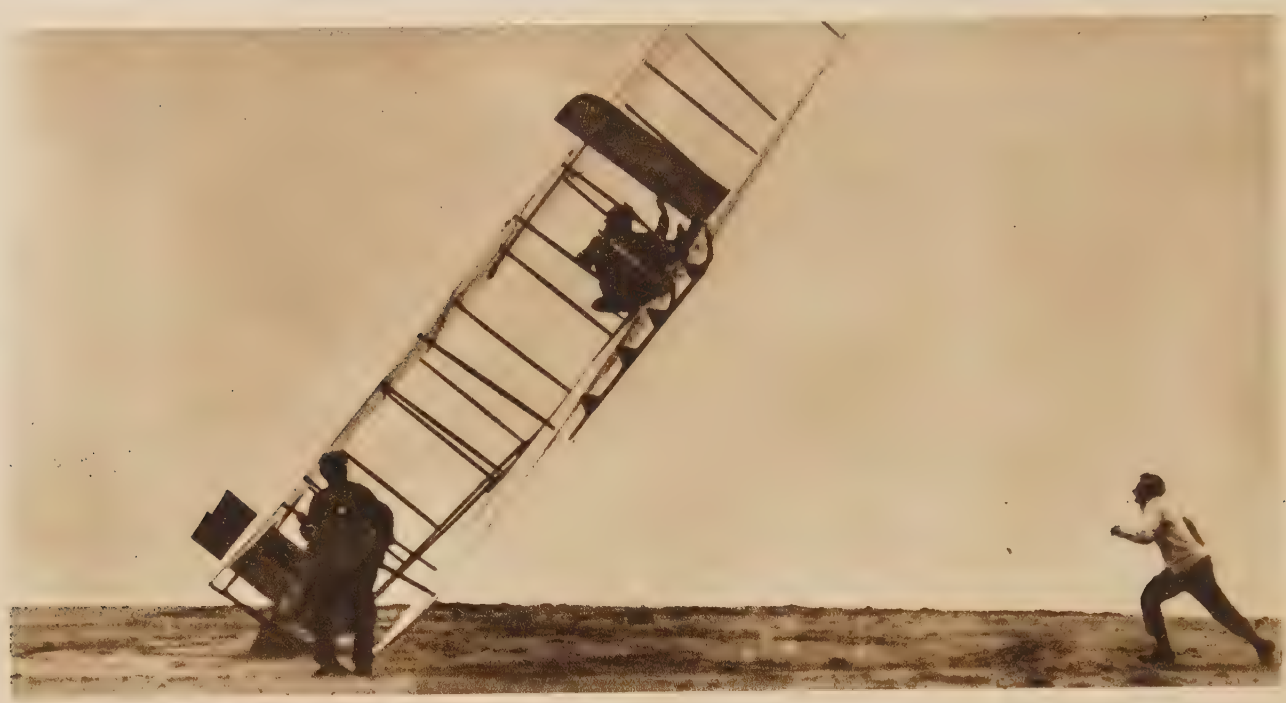
EARL OVINGTON carried the First American Air Mail (September 14, 1911)—a pouch made up at the temporary air mail post-office established at a great aviation meet at Sheepshead Bay, Long Island, and flown by Ovington to the post office at Jamaica. The United States Post Office Department issued a special stamp for this mail.

Postmaster-General Frank H. Hitchcock is shown (above) handing the mail bag to Ovington. On the extreme left is Postmaster Edward M. Morgan of New York City; between him and the Postmaster-General is Superintendent Dixon of the Railway Mail Service. Photograph in Ernest L. Jones Collection.

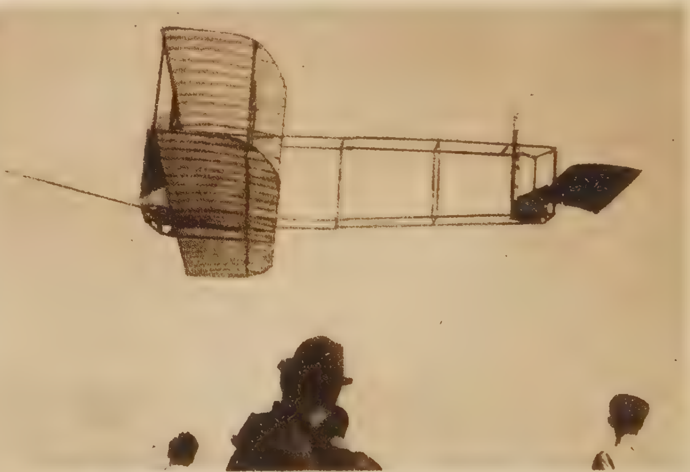
THE FIRST ENGLISH AIR MAIL was flown by Gustave Hamel (above), noted English flier, who flew from Hendon, near London, to the city of Windsor with the first pouch (September 9, 1911). This was an experiment, but it was continued for some weeks to prove the entire feasibility of transporting letters by airplane.

THE LONGEST OVER-WATER FLIGHT yet attempted was made by Lieutenants J. H. Towers and T. G. Ellyson of the United States Navy (October 25, 1911). They flew from Annapolis, Maryland, to within two miles of Fortress Monroe, Virginia—140 miles almost entirely over the waters of Chesapeake Bay, in 2 hours and 27 minutes. The flight was made in a Curtiss seaplane at an average altitude of 1,000 feet. These two were among the Navy's earliest and most successful pilots and both were to rise high in the naval air service. Official United States Navy photograph (left) shows Towers and Ellyson.

WRIGHTS *Conduct* SCIENTIFIC TESTS *in America*—1911



WRIGHT GLIDER DARING THE ELEMENTS IN A WILD KITTYHAWK GALE
Photographs (above and left below) in Army Air Corps and International Collections.



MOTORLESS GLIDER EXPERIMENTS by Orville and Wilbur Wright at Kittyhawk (October, 1911) were made from Kill Devil Hill as an important step in their search for automatic stability for airplanes.

This problem remained to be wholly solved many years later, but the Wright brothers made remarkable progress toward satisfactory methods of obtaining stability.

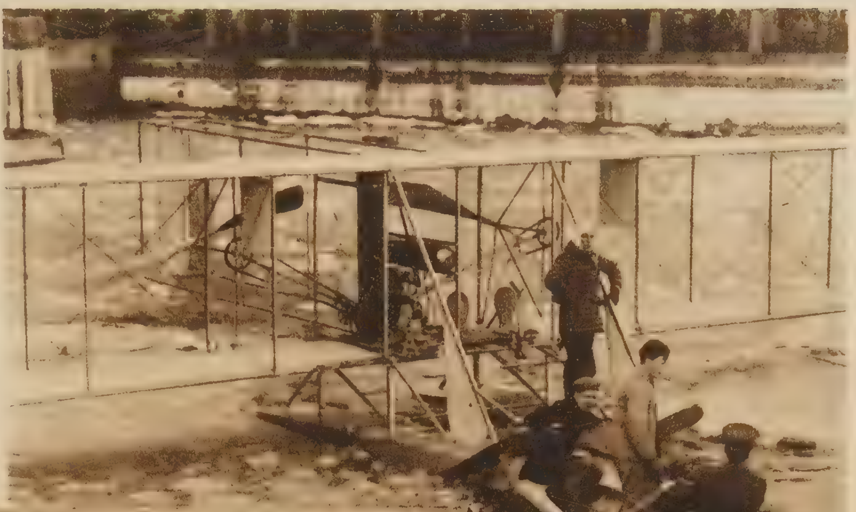
In the course of these gliding experiments Orville Wright established a world's record for the glider (October 25, 1911) when he remained in the air for 10 minutes and 34 seconds in a 52-mile blow. He reached an altitude of 225 feet and maintained this for some time. Photograph of this feat (above) in the Vivian Collection.

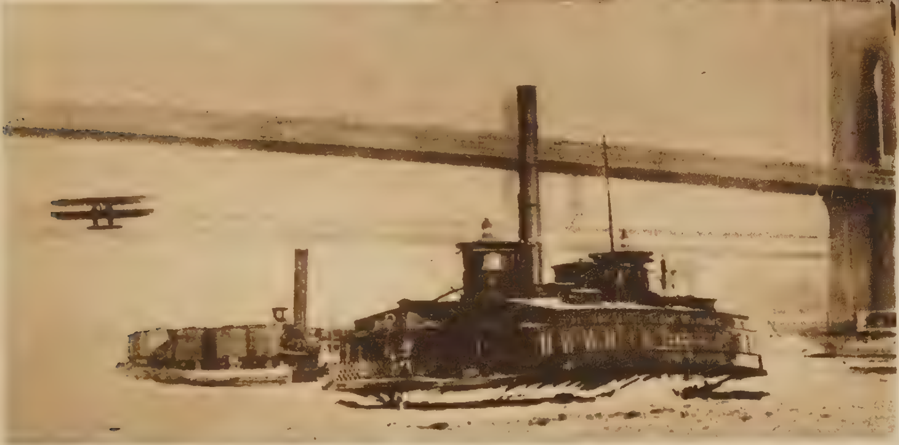
First SEA PLANE FLIGHTS *in* NEW YORK—1912

FRANK T. COFFYN, holds a preeminent position in world history of aeronautics as one of the first sextette of pupils taught to fly by the Wright brothers. Amid great enthusiasm he introduced the seaplane to New York City (February 6, 1912).

Coffyn fitted pontoons to a Wright plane, the first to be thus equipped, and took off amid floating ice on the Hudson river, flew upstream to Grant's Tomb and then back to circle the Statue of Liberty, returning to the Battery.

Coffyn startled his home city by flying under both Manhattan and Brooklyn bridges (February 13, 1912).

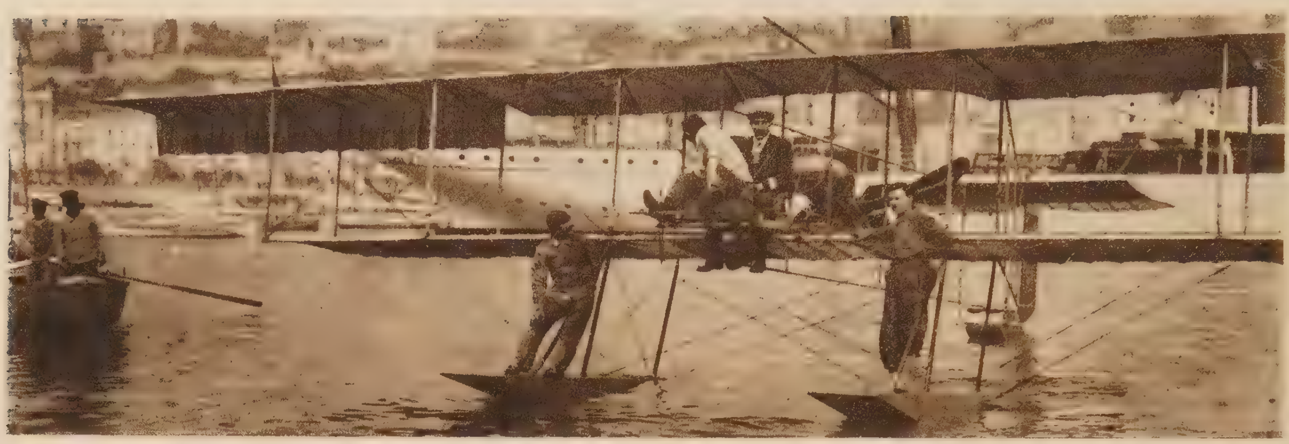




Coffyn made the first flight down the Bay of New York to catch a transatlantic liner with a belated passenger. His flying over the harbor and the city itself were the sensation of the times. We see Coffyn being towed out from the ferry slip by a Police Department skiff (above); we see him flying under Brooklyn Bridge (left).

AIRPLANE INVENTOR COMES TO WATCH STAR PUPIL FLY (below)—Wilbur Wright and Frank Coffyn are seen here at the Battery, New York (February, 1912), smiling over a newspaperman's joke. All photographs from the Personal Collection of Frank T. Coffyn.

GERMANY *Wins* WORLD'S *First* SEA PLANE *Meet*—1912



FISCHER ABOUT TO FLY AT WORLD'S FIRST SEAPLANE MEET (above)—Brown Collection.

GERMANY won chief honors in the First International Aviation Meet for hydro-airplanes, held at Monaco (March 24-31, 1912). Flying a Farman biplane, Fischer went well ahead of the American, French and English pilots entered and finished first on points. Hugh Robinson, who finished fourth, was the only American entered, flying a Curtiss seaplane. Paulhan of France, who finished third also, flew a Curtiss plane. In the seaplane (above) Fischer flew with four passengers, two of whom stood on the pontoons.

CODY WINNING BRITISH ARMY TRIALS (above)—At Farnborough (August, 1912,) this American flier starred for the British and brilliantly won the Army tests for a military plane. Cody sold the first airplane to John Bull's Government. He was killed in a crash to Aldershot (August 7, 1913).

AUDEMARS (left)—FIRST TO FLY FROM PARIS TO BERLIN—This brilliant French airman (left) brought a message of good will from the French to the Germans via the aerial route (August 18, 1912).

FOKKER—NOTED AIRPLANE DESIGNER IN EARLY FLIGHT—Anthony H. G. Fokker (below, right), to become, during the World War, one of the great airplane designers of the world, is here shown about to make a flight with a passenger (Von Arnim) at the Johannistal flying field, near Hamburg (October 6, 1912).

First WOMAN *Airplane* PILOTS *in* AMERICA—1911-12

FIRST PILOT'S LICENSE to be issued to an American girl was held by Harriet Quimby of Boston (July, 1911), later to be the First Woman to Fly the English Channel and finally to meet death in a crash in Boston (see page 249).

The second woman pilot to be licensed in America (August, 1911) was Mathilde Moisant, (below, right) sister of the famous John B. Moisant. She was one of the world's first woman fliers, taking lessons in handling the plane from her brother even before he took Miss Quimby as a pupil. Miss Quimby had License No. 37 and Miss Moisant, No. 44.

Miss Moisant held the American altitude record for women with a flight to 1,500 feet above the earth. She gave up public flying (1912) after her plane caught fire in the air over a Texas city and she came down in flames, but safe except for minor injuries.

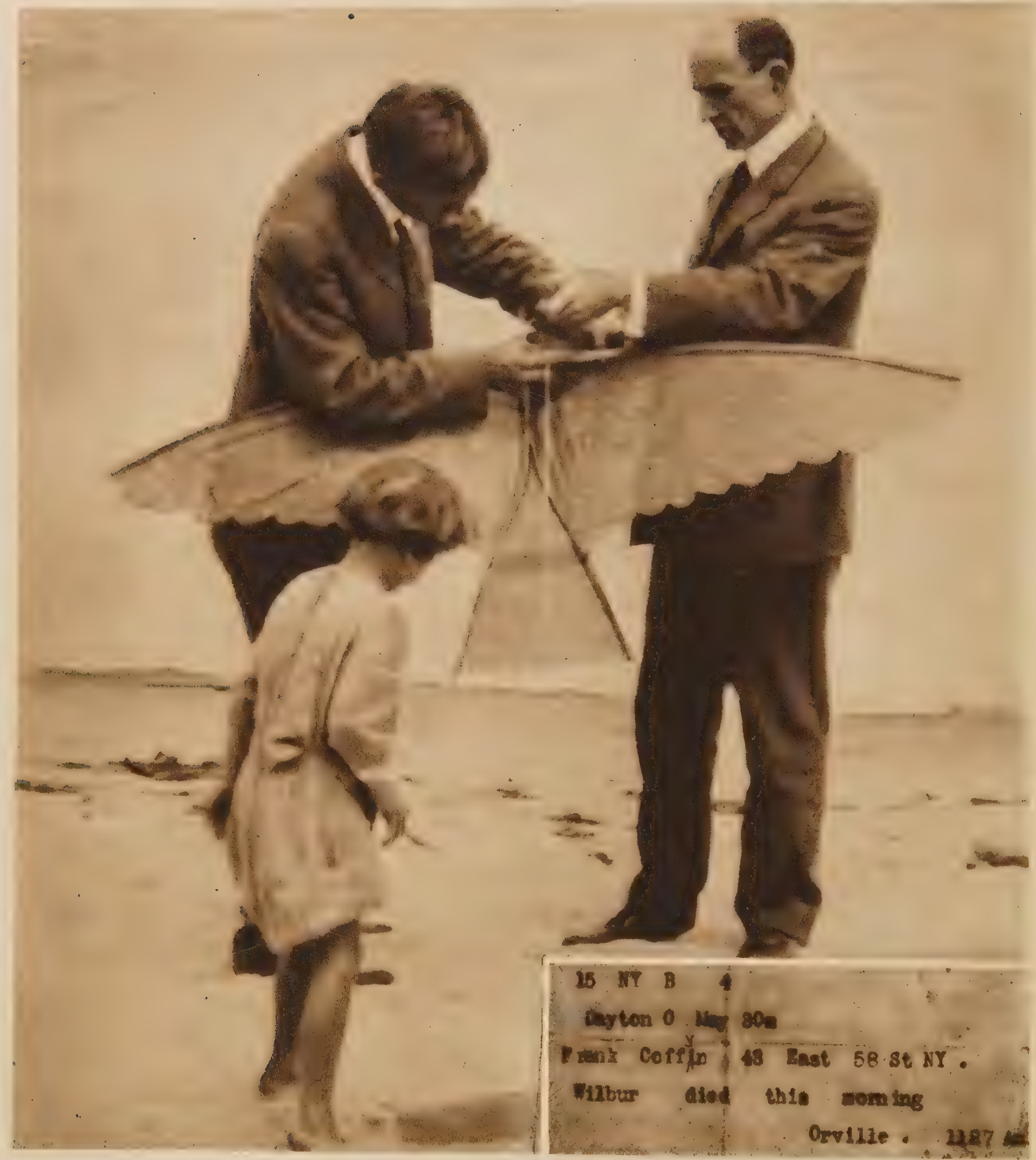
The first American girls to do exhibition and stunt flying were Katherine Stinson of Detroit, and Ruth Law of Chicago. The two became licensed airplane pilots (July, 1912). Marjorie Stinson, Katherine's younger sister, completed a trio seen in the air in brilliant aerial maneuvers over many American cities and towns.

Ruth Law later held the national non-stop record for a flight from Chicago to Hornell, New York, in an attempt to make New York City, to which she flew the following day.

The Katherine Stinson photograph is in the Horace B. Wild Collection; Ruth Law photograph in the Morton Downs Collection; Mathilde Moisant photograph in the Brown Collection.

KATHERINE STINSON (Above)—RUTH LAW (Below)

MATHILDE MOISANT, FIRST WOMAN FLIER TO BE TAUGHT BY HER FAMOUS BROTHER



15 NY B 4

Dayton O May 30m

Frank Coff~~i~~yn 48 East 58 St NY.

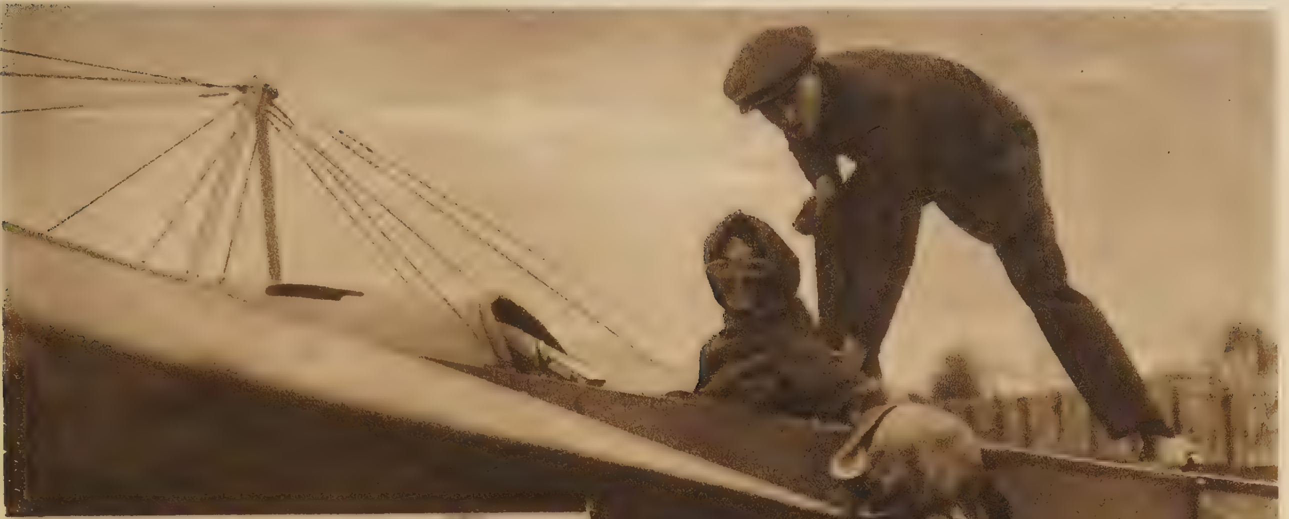
Wilbur died this morning

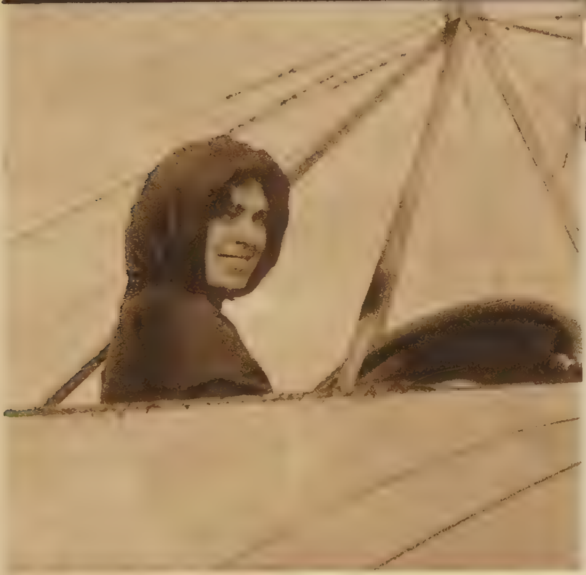
Orville. 1127 am

HISTORIC PHOTOGRAPH OF WILBUR WRIGHT—WITH TELEGRAM ANNOUNCING HIS DEATH

A GREAT SCIENTIST and noble character was mourned by the world when Wilbur Wright died at his home in Dayton, Ohio, on Memorial Day (May 30, 1912). The "Conqueror of the Air" fell the victim of typhoid fever at 45 years of age. This historic photograph shows him with his friend and co-worker, Frank T. Coffyn, a pioneer Wright pilot, adjusting a toy airplane he has brought from Paris for Coffyn's young son, Kingsland Coffyn. The telegram is from Orville Wright: "Wilbur died this morning." These records are among America's priceless historic treasures, in the Collection of Frank T. Coffyn.

First WOMAN *to* FLY *Across* ENGLISH CHANNEL—1912



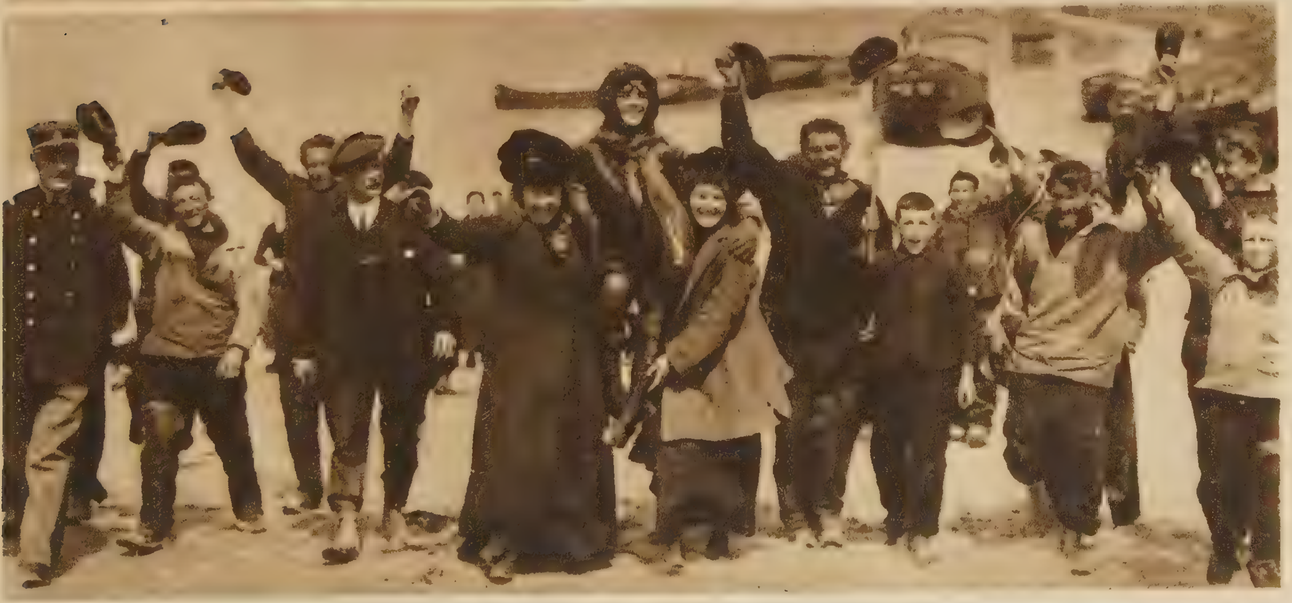


HARRIET QUIMBY, American woman journalist, was the "First Woman to Fly the English Channel." The great event took place from Deal, England, to Epihen, France (April 26, 1912).

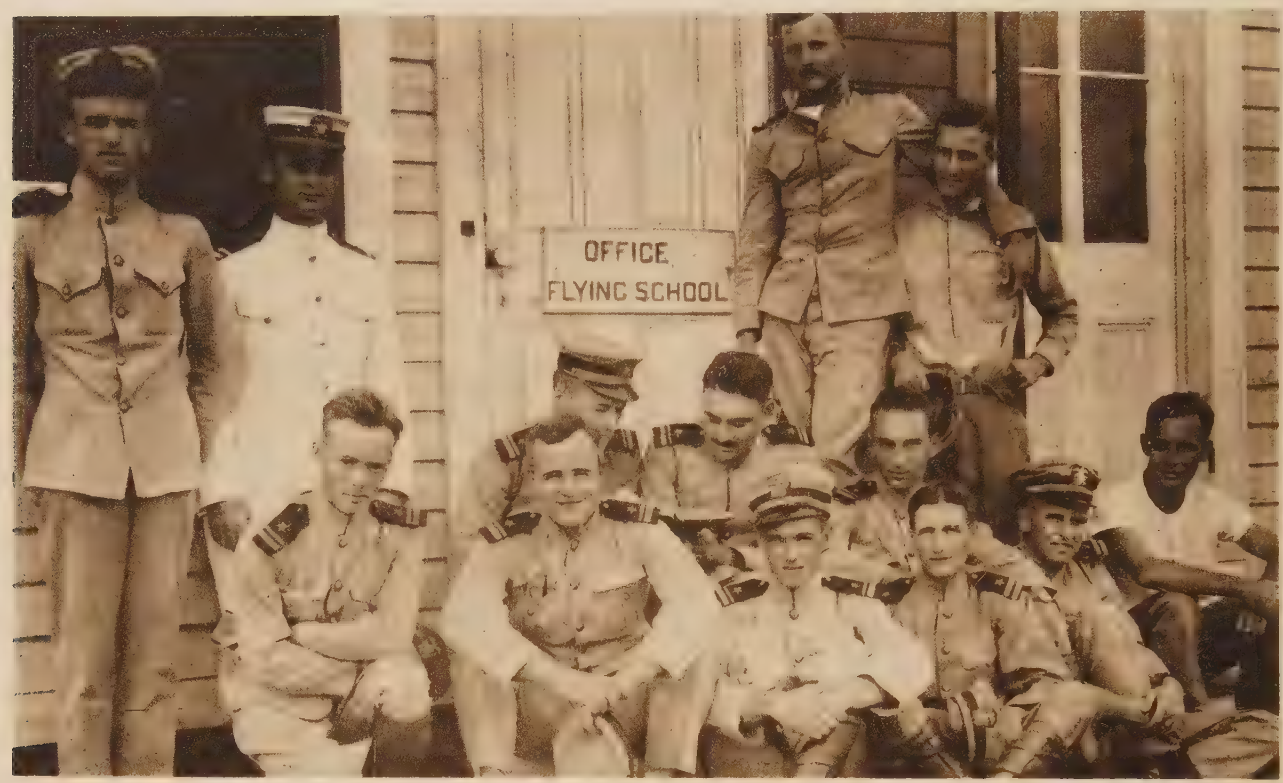
This daring American girl startled the world by her brilliant feat. Miss Quimby flew a new plane for the first time on the Channel flight. When she went up, it was believed to be only a test flight. But she sailed straightaway across to France, at 6,000 feet altitude, in a sea of clouds and flying only by the compass, with which she was not at all familiar.

Miss Quimby is shown (above) shaking hands with a woman friend just before taking off. We see her in her Bleriot (left). The excited people of Epihen are welcoming the aviatrix to France (below). Photographs in the Brown Collection.

A few weeks later (July 1, 1912) Miss Quimby met death while flying in a meet at Boston, where she was born.



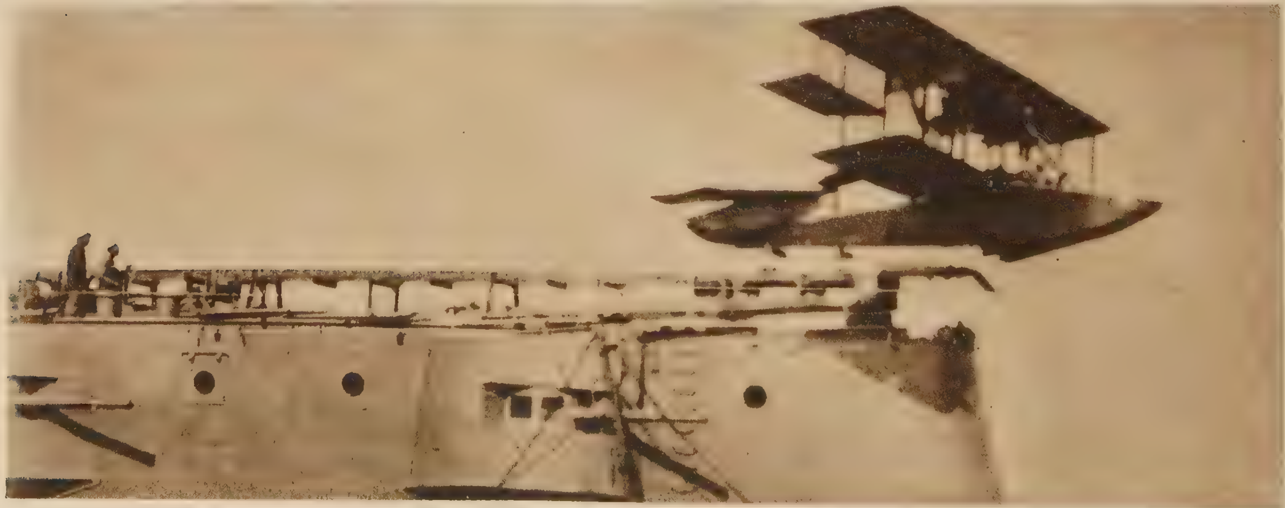
First "FLYING LIEUTENANTS" *United States* NAVY—1912



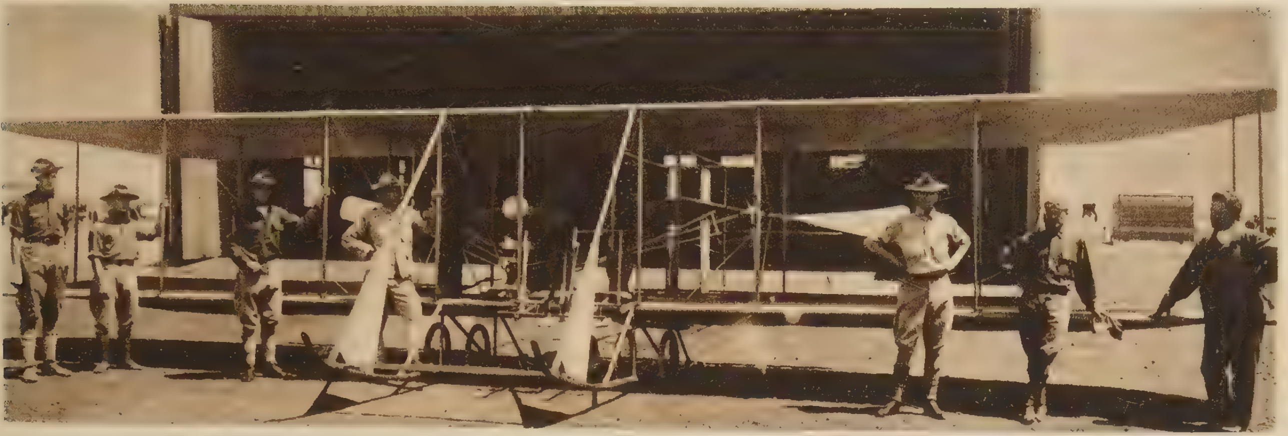
FIRST CLASS OF "FLYING LIEUTENANTS"—This Government Photographic Record was taken at the Pensacola Naval station, Florida (1912). Here we meet the men as they are learning to fly: Left to right (standing)—Schofield, Beeching, W. M. Carry, T. P. Norfleet; (seated, rear)—E. G. Haas, E. W. Spencer, Jr., R. R. Pannack; (seated, front)—W. D. Capeheart, G. R. Bronson, W. Atlee Edwards, A. C. Read, E. F. Johnson, G. D. Murray.

Edwards was later to achieve fame, receive the Congressional Medal of Honor and be made Commander of the Legion of Honor, by the rescue of 400 from a burning French hospital ship in the Sea of Marmora (1917) while commanding the U. S. Destroyer "Bainbridge." Read (now Commander) commanded the N C-4 when she was first to fly the Atlantic to Europe (1919).

UNCLE SAM'S FIRST SEAPLANE CATAPULT (Below)—The United States Navy, struck by Eugene Ely's success in flying to and from a battleship, (1910–11), saw the need of a catapult device for launching planes from warships. Capt. W. Irving Chambers, U.S.N., developed a catapult, operated by compressed air, which worked with success from the beginning. This was first tested (November 12, 1912). The photograph (below) shows Capt. Mustin, of the Navy, flying the first plane launched from it. Today every warship large enough is equipped with a catapult. Official Government photographs from United States Naval Air Service.



First "FLIERS" *in the* UNITED STATES ARMY—1912



NUCLEUS OF UNITED STATES ARMY AIR CORPS OF TODAY (Above)—Government Photograph.

UNCLE SAM'S EARLIEST AIR ESTABLISHMENT—Here we meet Lieut. Benjamin D. Foulois, with five enlisted men and a single Wright plane, at San Antonio, Texas (1912). Lieut. Foulois was the only pilot, self-taught at first. With a clear vision of the coming of the New Age from the moment he was a passenger with Orville Wright (1909), he had talked it night and day.

"Let him have an airplane and break his neck," finally snapped a superior. "That'll end the nonsense." Lieut. Foulois has since become Brigadier General Foulois, now Assistant Chief of the Army Air Corps, which today has more than 12,000 officers and men and over $11,000,000 worth of planes. Photograph in Brown Collection.

COLLIER TROPHY (Above)—ORVILLE WRIGHT won the notable Collier Trophy (1913) for his airplane auto stabilizer as the "Greatest Aeronautical Achievement of the Year." Robert J. Collier, its donor was president of the Aero Club of America. Glenn Curtiss won it (1911) for his invention of the hydro-airplane and (1912) as originator of the flying boat. Photograph in the collection of the National Aeronautic Association in Washington.

SCHNEIDER TROPHY
(Right)
World's Leading
Seaplane Award
For High Speed.

First International
Contest at
Monte Carlo (1913)

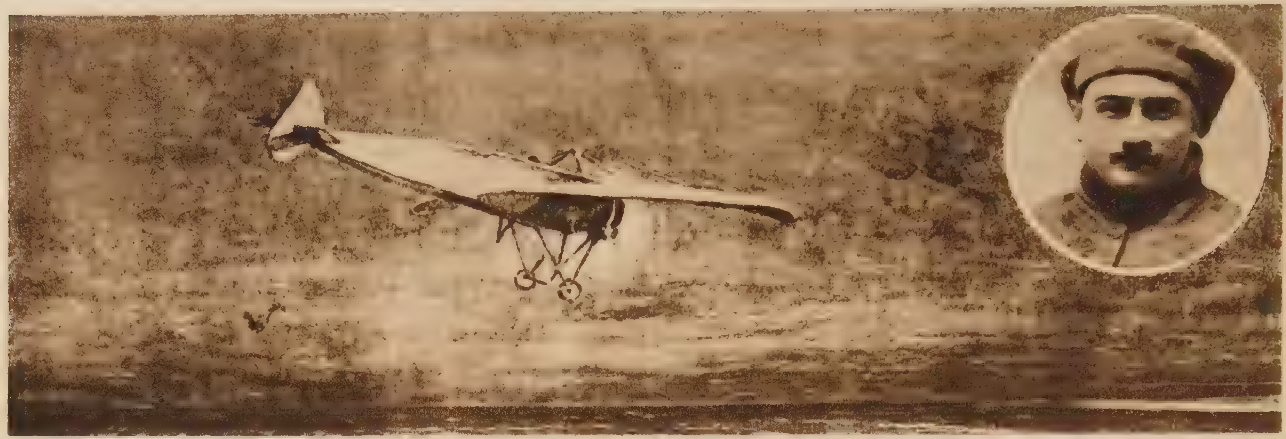
Present Record
328.64 Miles Per Hour

Official Photograph
United States Navy.

LANGLEY MEDAL AWARDED TO CURTISS (Below)—Smithsonian Institution honored Glenn Curtiss with its great aeronautic trophy (1913). Ernest L. Jones Collection.

FOR THE INCREASE AND DIFFVSION OF KNOWLEDGE AMONG MEN
LANGLEY MEDAL
GLENN H. CURTISS
AERODROMICS
SMITHSONIAN INSTITVTION WASHINGTON 1846
PER ORBEM

First AIRPLANE *Flight* ACROSS *the* MEDITERRANEAN—1913

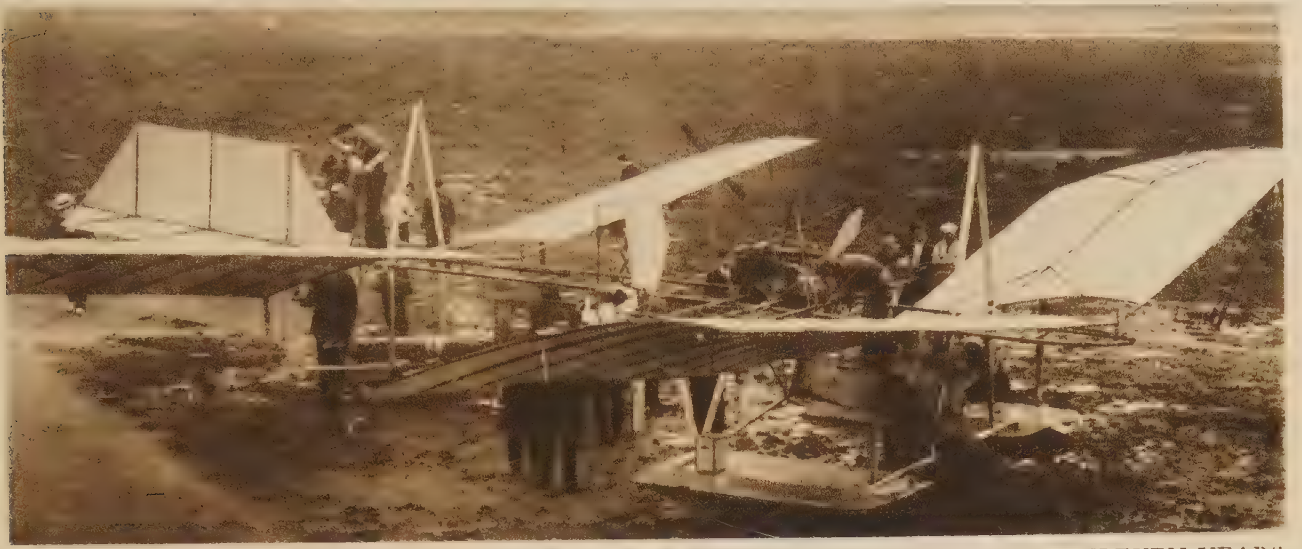


FIRST LONG FLIGHT ACROSS THE SEA—558 MILES—ROLAND GARROS, noted French airman, (above) was first to dare the long overwater flight across the Mediterranean Sea (September 23, 1913). He flew from the Frejus aerodrome at St. Raphael, near Cannes, to Bizerte, Tunis—a distance of 558 miles. This was the most important flight across water yet attempted. Garros left France at 5.22 A.M. and landed in Africa at 1.15 P.M. Our reproduction is of a painting in the Collection of the Count de la Vaulx in Paris.

FIRST GREAT WORLD'S ALTITUDE FLIGHT—M. G. LEGAGNEAUX, French altitude flier, (left) made an amazing record for soaring into the high heavens (December 28, 1913) when he flew to an altitude of 20,090 feet above the earth—6,120 meters—four miles up! Legagneaux had broken records before, flying from the Issy aerodrome near Paris. This time he gained world fame with a mark which stood for a long time.

FIRST TO LOOP-THE-LOOP—ADOLPHE PEGOUD of France (below) was first to loop the loop in an airplane, and establish in France and England the fact that flying upside down was perfectly feasible (1913). Pegoud, who was to become a noted war flier a year or so later, is shown (below) being strapped into his plane by an assistant, preparatory to stunts in the air which left the watchers below breathless. Photographs in Thompson Collection.

FINAL TRIAL *of* LANGLEY'S *Famous* AERODROME—1914



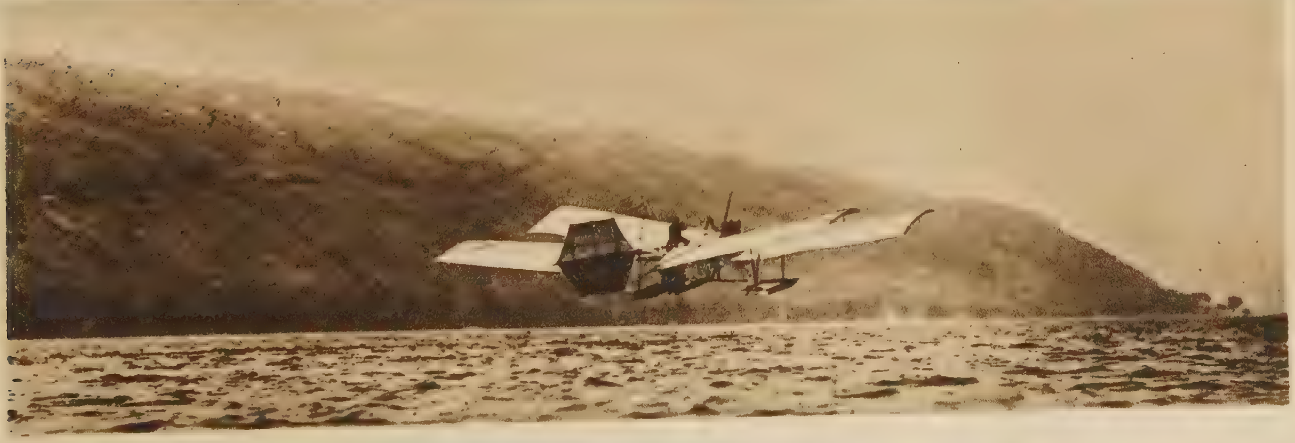
ASSEMBLING THE HISTORIC LANGLEY AERODROME FOR GRAND TEST AFTER ELEVEN YEARS
Photographs on this page in the Smithsonian Collection at Washington.

AN IMPORTANT EVENT in the History of Aeronautics now takes place (Summer of 1914). It is eleven years since the disastrous trials of the Langley machine (1903) and eight years since Dr. Langley's death (1906).

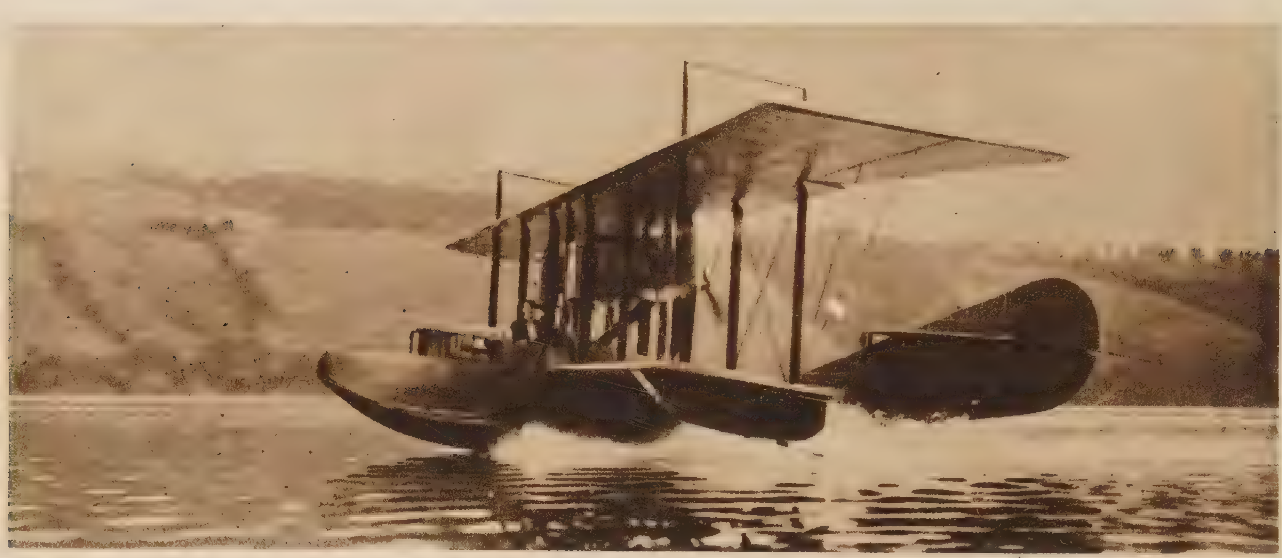
Friends of the great scientist, who have believed the Langley machine would fly if properly launched, formed the group known as the Langley Laboratory. The historic Langley "Aerodrome" was taken from the storehouse, reassembled, supplied with new parts, and equipped to take off from the water. The houseboat catapult was abandoned and the machine provided with pontoons.

GLENN CURTISS took his place at the controls and made a successful flight with the rebuilt "Aerodrome" (June 2, 1914), at Hammondsport, New York. These photographic records in the Smithsonian Institution attest the historic event.

FAMOUS LANGLEY MACHINE FLIES WITH GLENN CURTISS AT HAMMONDSPORT (Below)
Photograph © H. M. Benner



First PLAN *to* FLY *Across* ATLANTIC *in* AIRPLANE—1914



TRYING OUT THE "AMERICA" ON SURFACE OF LAKE KEUKA (Above)—Pacific-Atlantic Collection.

LIEUT. JOHN CYRIL PORTE, of the British Navy, was first to propose an airplane flight across the Atlantic from New York to London (1914). But for the opening of the World War, he would have made the attempt about mid-August of that year. Rodman Wanamaker of New York backed the project.

Glenn Curtiss built at Hammondsport the huge flying boat "America" (above) and put into it two 90 horsepower Curtiss engines. After a successful test flight over Lake Keuka (July, 1914) this was declared ready to fly the ocean and further preparations were in progress when the outbreak of the war stopped them.

Lieut. Porte was at once recalled to England. Curtiss' offer of the plans of the "America" to the British Government, and later to our own, was accepted. The seaplanes which patrolled England's coasts during the war were her sister ships, as were the N C boats of the United States Navy, one of which, N C-4, was the first airplane to cross the Atlantic (1919).

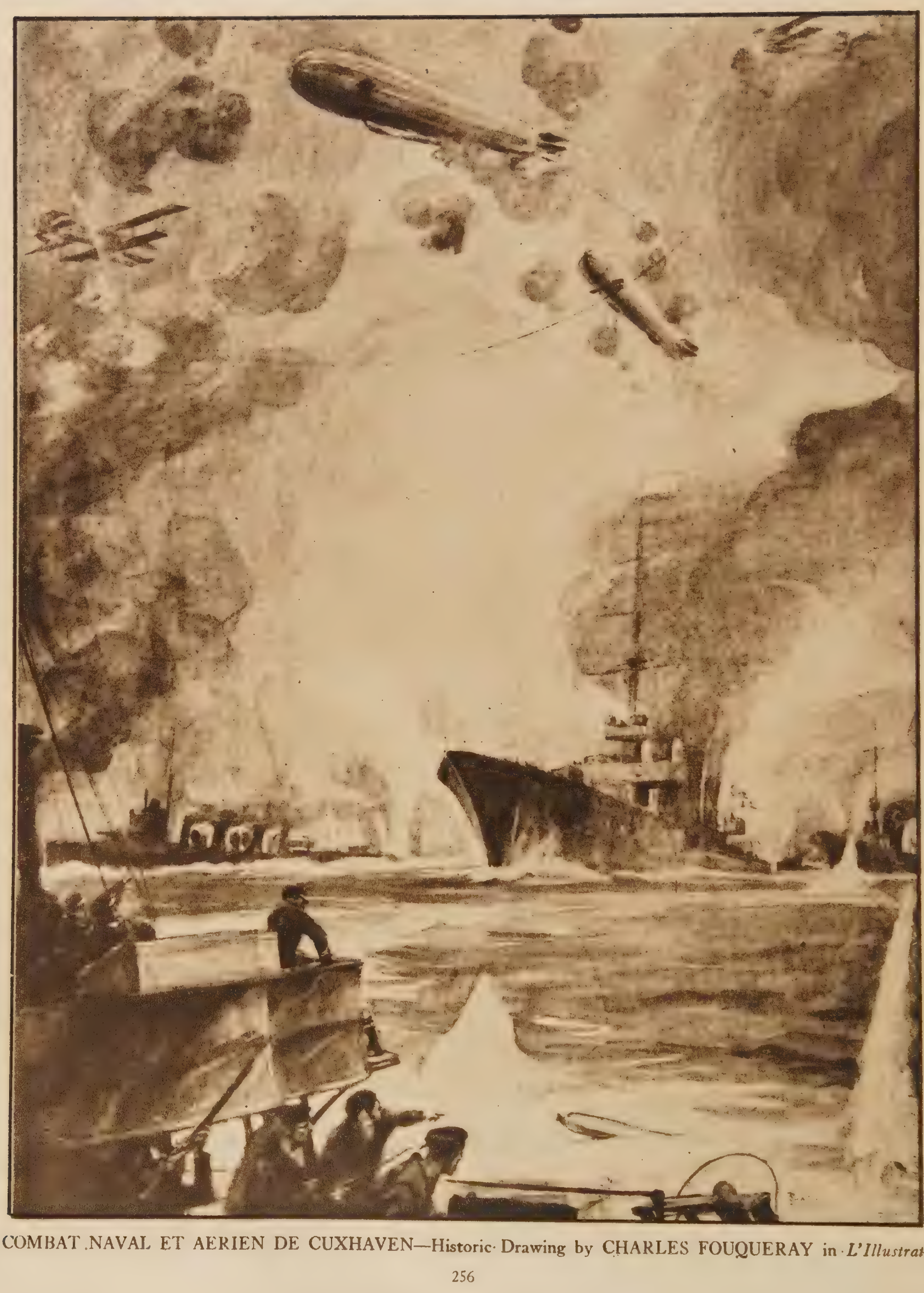
GLENN CURTISS AND LIEUT. PORTE AT HAMMONDSPORT (Below)—Thompson Collection.

WORLD WAR *Breaks with* FRANCE *First in* AIR—1914

MILITARY AIRPLANES IN PRE-WAR FRENCH ARMY MANEUVERS (Above) Brown Collection.

FRANCE WAS FIRST to adopt the airplane as a military arm. When the World War broke (August, 1914) France had 1,273 pilots, as against Great Britain's 750 and Germany's 680. France had 1,100 airplanes—Germany, 1,000—Great Britain 450. Russia had 875—Italy 600—Austria 400—and little Belgium 250. France immediately made effective use of the airplane for scouting purposes and the other nations soon followed suit. Uncle Sam at that time had but 100 planes and 252 pilots. Photograph by L. Sabattier of Paris.

LATHAM FLIES WITH GENERAL LYAUTEY'S ARMY IN MOROCCO (Below)



LE COMBAT NAVAL ET AERIEN DE CUXHAVEN—Historic Drawing by CHARLES FOUQUERAY in *L'Illustration*

PART XVI

WORLD WAR—*First* COMBATS *of the* CLOUDS

FAMOUS ACES—AIR RAIDS—*and* AERIAL BATTLES

WORLD WAR sweeps the Nations like a huge conflagration; four years of devastation (July 28, 1914–November 11, 1918). Gigantic armies of 65,038,810 fighting men are mobilized, with total casualties reaching the appalling figure of 37,499,386—of which 8,543,515 are killed, or die—21,219,452 are wounded — and 7,750,919 taken prisoners and missing. These are the official figures from the War Departments of the Nations.

The Science of Aeronautics is commandeered as a decisive factor. "War in the Air," the dream of the ages, becomes a reality. Air raids and aerial combats strike strategic blows at the enemy lines. More than 20,000 conflicts are fought in the clouds and before the close of the war more than 150,000 men are engaged in the aeronautic branch of the armies while aviators engage in more than 100,000 pursuit missions, observation missions and bombing flights. Fleets of fighting planes at the battlefront reach 10,136—6,784 with the Allied armies and 3,352 with the Central Powers—while behind the lines construction is speeded up for more than 50,000 fighting planes if the war continues another year.

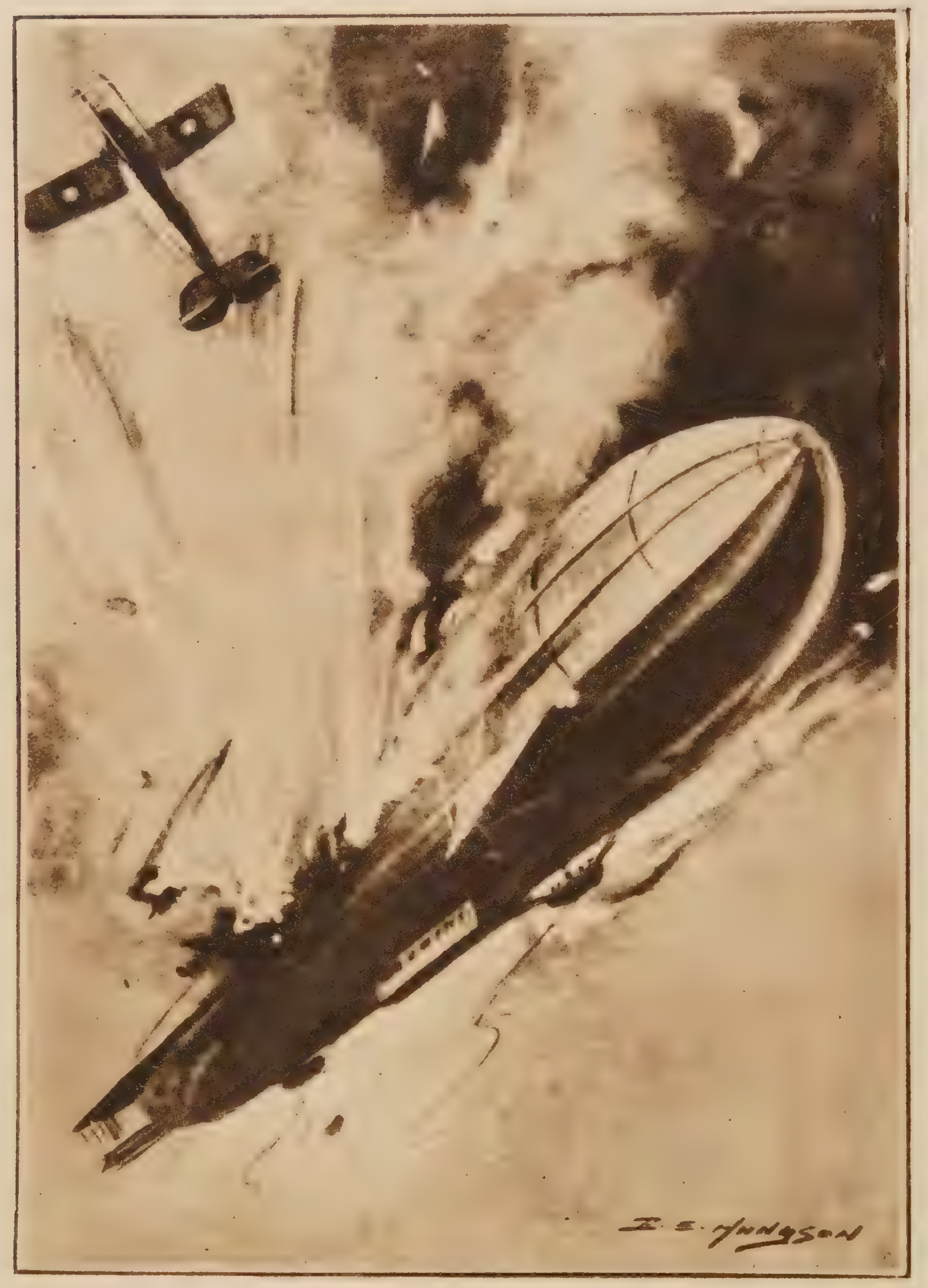
The new power is unleashed with all its stupendous force. It is only a decade since the Wrights made their first historic flight in America (1903); fifty years since Lincoln first utilized the Observation Balloons on the Western Continent in the American Civil War; about a century since Napoleon first established his Montgolfier corps in the world's warfare.

We have witnessed in these pages the first Napoleonic balloons at the Battles of Maubeuge and Fleurus (1794)—with Jourdan's Army in front of Andernach and Ehrenbreitstein captured by Duke Karl's Austrian Army at Wurzburg (1796)—French Aerostiers ordered to Egypt in the Battle of the Nile (1799)—Austrian bombardment of Venice with balloon torpedoes (1849)—French balloons at Battle of Solferino (1859)—American balloons directing artillery fire in Civil War (1861–4)—Balloons dropping explosives on Japanese Imperial troops during seige of Duke v. Aidzu's fort at Wakamatzu (1869)—Balloons at seige of Paris in French Revolution (1870)—with French Army at the Battle of Hong-Hoain Tonkin (1884)—English Army in the Soudan and Bechuanaland (1885)—Italian Army in Abyssinian operations (1887)—Battle of Santiago in the Spanish-American War (1898)—Lord Robert's Army in Boer War (1900)—French and English armies in campaign against China (1900)—Russian-Japanese War at Battles of Port Arthur, Liaoyan, and Mukden (1904)—Spanish Army in operations against the Moors (1909)—We first find the airplane with the American forces on Mexican border (1911) and with Spanish Army in Morocco campaign (1911)—Airplanes and airships appear in the Tripoli campaign in the Balkan War (1912–13).

The World War is the "First Great War in the Air." It is prophetic of future wars. The genius behind the German airship forces was Count Zeppelin (trained under Lincoln in the American Civil War) and Anthony G. H. Fokker, a Hollander, (now an American) with his airplanes. Fokker first offered his air fleets to the Allies. Count Zeppelin died (1917) just before the collapse of the German armies and almost on the eve of the longest flight yet known to history when one of his Zeppelins (L-59) left Jamboli, Bulgaria (November 12, 1917) with supplies for the troops under General von Lettow in German East Africa. The L-59 crossed to Asia Minor and was "over Smyrna when darkness came . . . at sunrise it was over the Sahara Desert." Following the Nile to Victoria Nyanza Falls, a radio message flashed out of the night: "Von Lettow has surrendered." Turning back, the great airship crossed the Mediterranean and "home to Bulgaria"—having voyaged 5,500 miles in four days. Three days after the Armistice was signed (November 11, 1918) the Zeppelin LZ-72 was completed "for the express purpose of crossing the Atlantic Ocean and dropping four-and-one-half tons of bombs on New York City." Surrendered to France and renamed the "Dixmude," she was lost in a storm over the Mediterranean (1923).

The air records in the official archives in England, France and Germany alone would require a thousand volumes to preserve them. Nearly 265,000 aerial photographs were taken by the British during the last twelve months of the war; with an equal number by the French and the Germans. The aerial camera, with its rapid motion over battle-lines, was perfected by an American, Sherman Fairchild, when the United States entered the conflict. The War Department at Washington is the repository for 17,845 photographic negatives of enemy positions taken by American aviators. We can give in these pages but a few basic historical facts about air raids and aces, inasmuch as this subject is a great library in itself.

ZEPPELIN DESTROYED *By* BOMB *from* AIRPLANE—1915



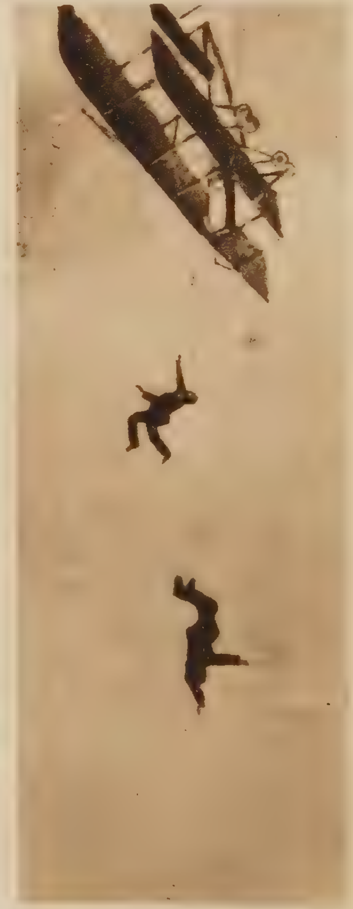
FIRST BRITISH AIR FIGHTER TO BRING DOWN ZEPPELIN—This World War honor belongs to Flight Sub-Lieutenant R. A. J. Warneford (1915).

This historic event took place over Ghent. Warneford on scout duty espied a Zeppelin on its raid. Mounting the clouds, he dropped an aerial bomb from his plane. The airman hit his mark. There was a terrific explosion and the Zeppelin burst into flames. For his valour, he was awarded the Victoria Cross. A few days later Warneford met a tragic end during a flight near Paris. Drawings by E. E. Hodgson for *London Graphic.*

FIRST AIR FIGHTER IN WORLD WAR—This distinction belongs to Roland Garros, one of the greatest aviators at the outbreak of the War (1914). He went into the air immediately in defense of Paris.

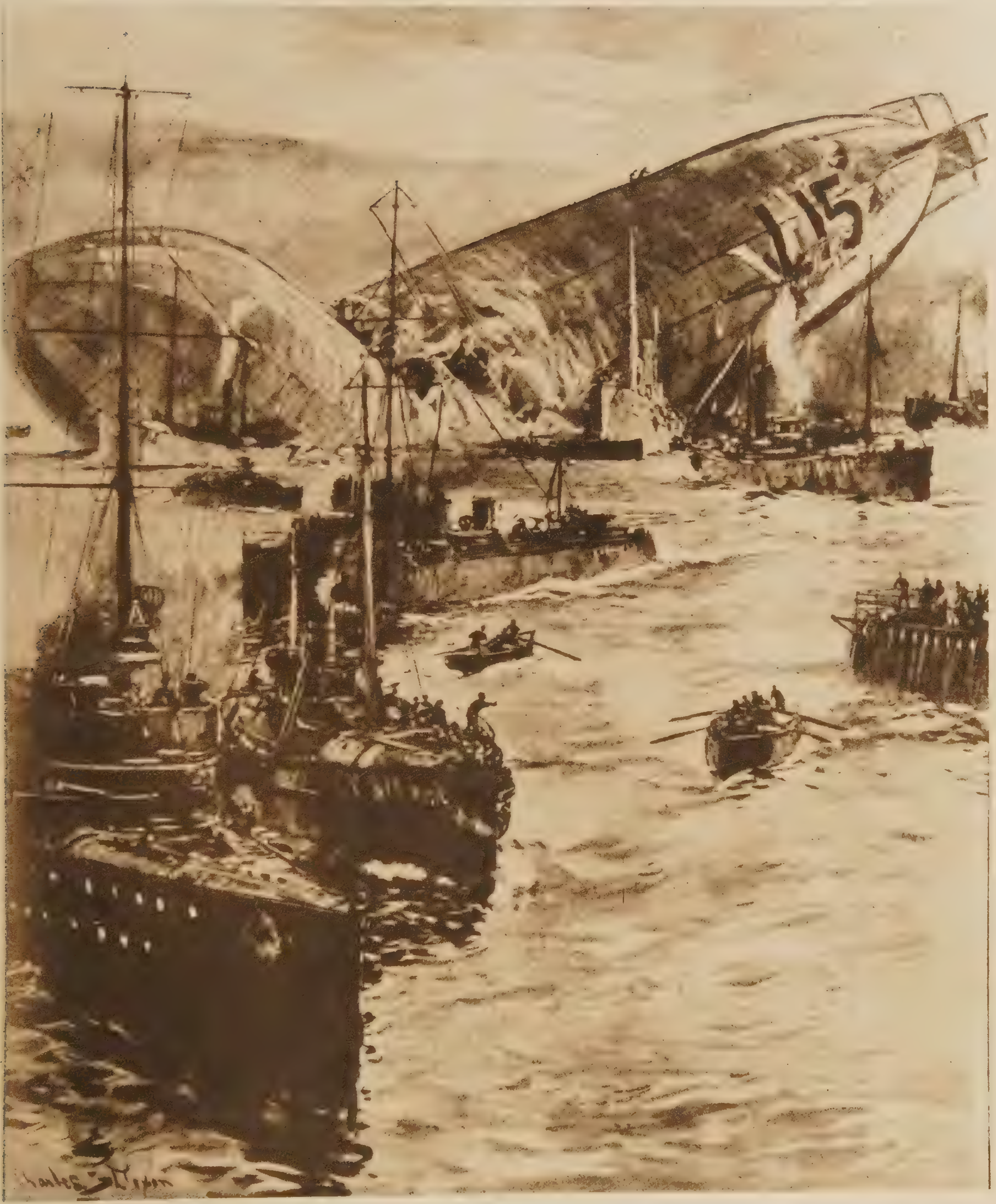
Garros invented the synchronizing gear which enables a machine gun to shoot directly through an airplane propeller (February, 1915). In eighteen days he shot down five enemy planes. Then (April 19, 1915) he was brought down within enemy lines, taken prisoner and his invention confiscated. After two years he escaped.

FIRST FRENCH AIR FIGHTER—GARROS



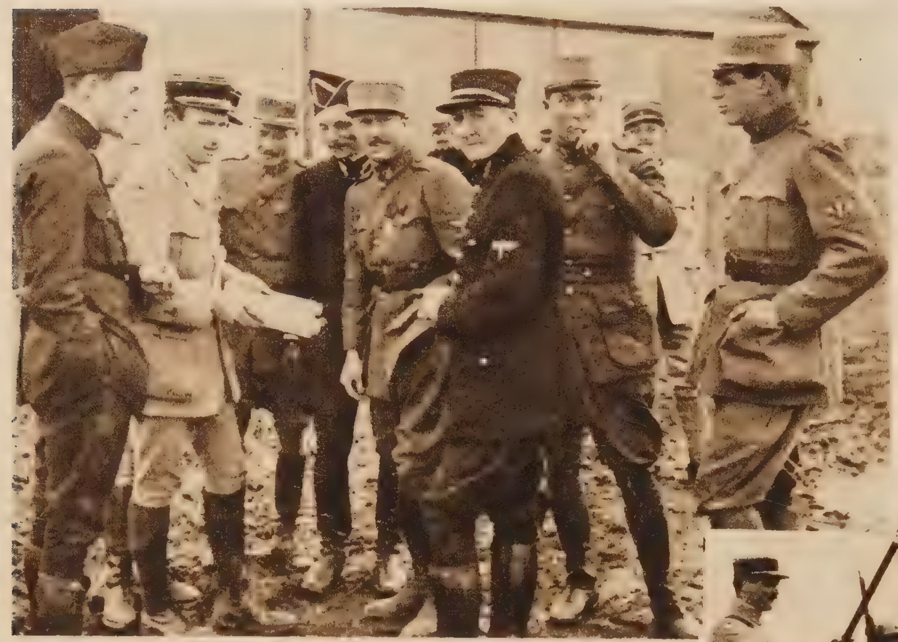
WARNEFORD DROPS TO DEATH FROM CLOUDS

AIR RAID *Over* LONDON ENDS *in* DISASTER—1916



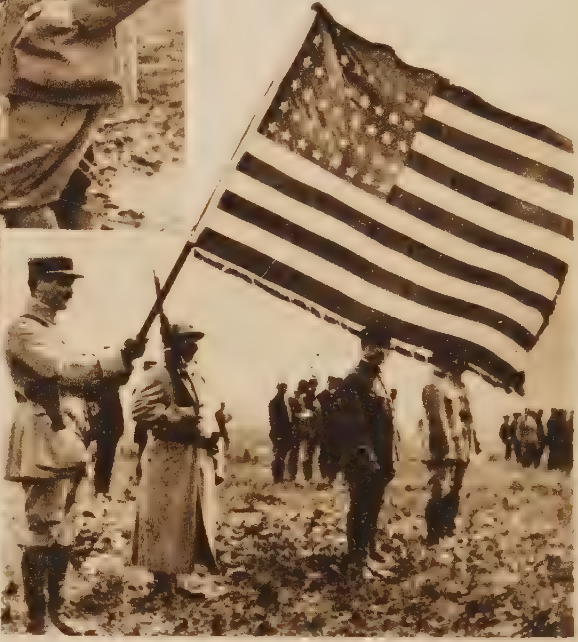
FIRST GERMAN ZEPPELIN DESTROYED OVER ENGLAND by the fire from British airplanes was the "L-15," while returning with others from an air raid on London (April 1, 1916). It was shot down near the mouth of the Thames and dropped into the sea near the Kent coast. Her crew were rescued by trawlers and destroyers which gathered nearby. Drawing by Charles Pepin for *London Graphic.*

FIRST AMERICAN AVIATORS *in* FRANCE—1916



HEROES OF THE AIR—Early Group of Lafayette Escadrille. Left to right: Kiffin Yates Rockwell—Major Georges Thenault (French Commander)—Lieut. Norman Prince, Lieut. Elliot Cowdin—Lieut. Bert Hall—Kenneth Marr (San Francisco)—Sergt. James McConnell—Sergt. Victor Chapman — Underwood Collection.

THE GLORIOUS LAFAYETTE ESCADRILLE—First young Americans to fly for France, before the United States entered the World War. The royal record of the Lafayette Flying Corps is a high spot in World War history. It was formed under the auspices of William K. Vanderbilt, Robert Bacon, Frederick Allen and other Americans in Paris. Its first roster (dated March 14, 1916) contained these names: William Thaw (Pittsburgh—now Col. Thaw)—Norman Prince (Beverly Farms, Mass.)—Elliot Cowdin (New York)—Bert Hall (Kentucky)—Kiffin Rockwell (Asheville, N. C.)—James McConnell (Carthage, N. C.)—Victor Chapman (New York). Others who made names for themselves in the Escadrille at once were Raoul Lufbery (Connecticut)—James Bach (New York)—Didier Masson, a naturalized American.

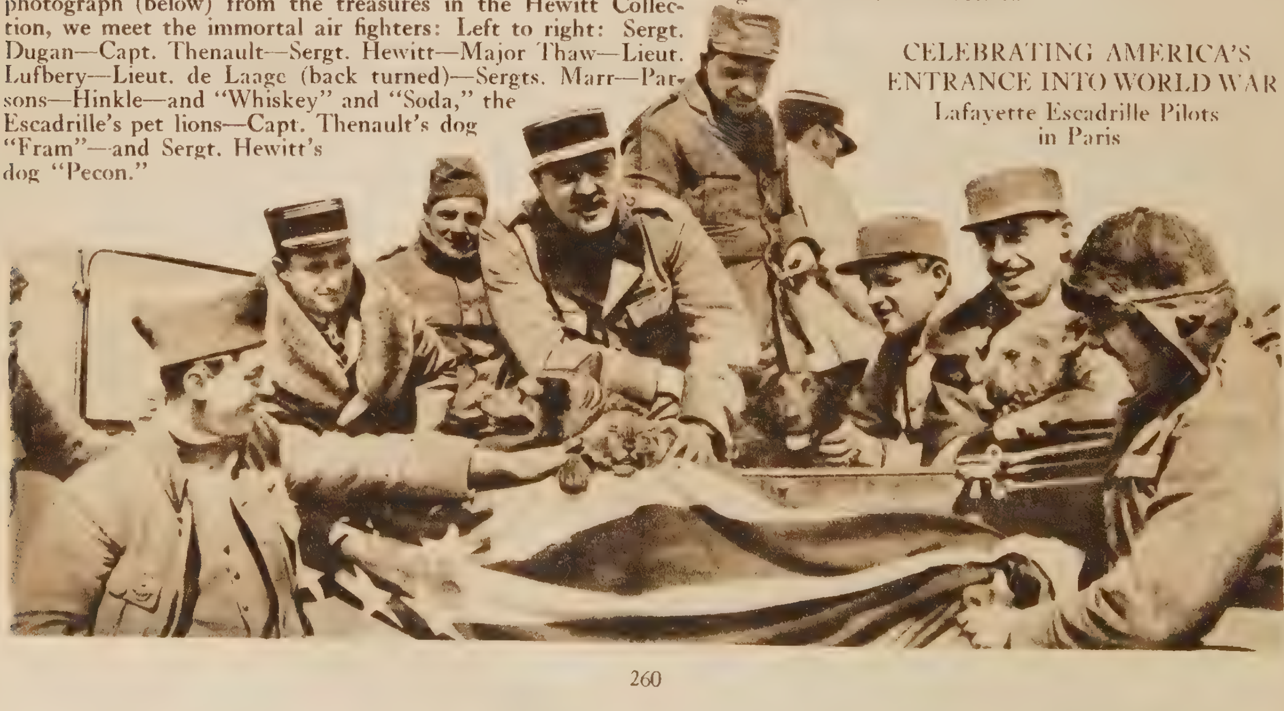


LT. THAW WITH ESCADRILLE COLORS (above)—Presented to Lafayette Escadrille by famed Alpine Chasseurs ("Blue Devils"). Copyright in Soubiran Collection.

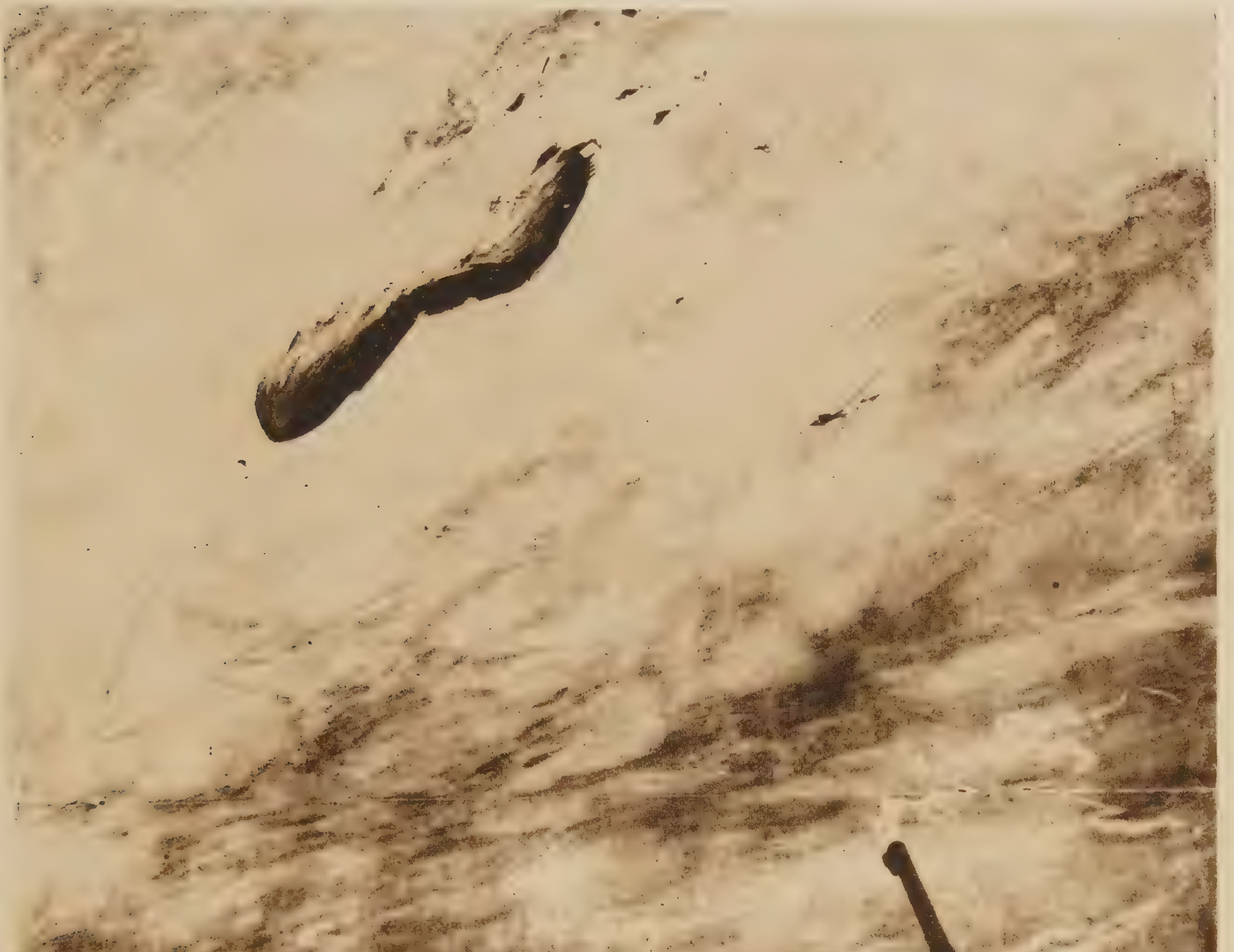
AMERICA'S AERIAL HALL OF FAME—In the historic photograph (below) from the treasures in the Hewitt Collection, we meet the immortal air fighters: Left to right: Sergt. Dugan—Capt. Thenault—Sergt. Hewitt—Major Thaw—Lieut. Lufbery—Lieut. de Laage (back turned)—Sergts. Marr—Parsons—Hinkle—and "Whiskey" and "Soda," the Escadrille's pet lions—Capt. Thenault's dog "Fram"—and Sergt. Hewitt's dog "Pecon."

CELEBRATING AMERICA'S ENTRANCE INTO WORLD WAR

Lafayette Escadrille Pilots in Paris



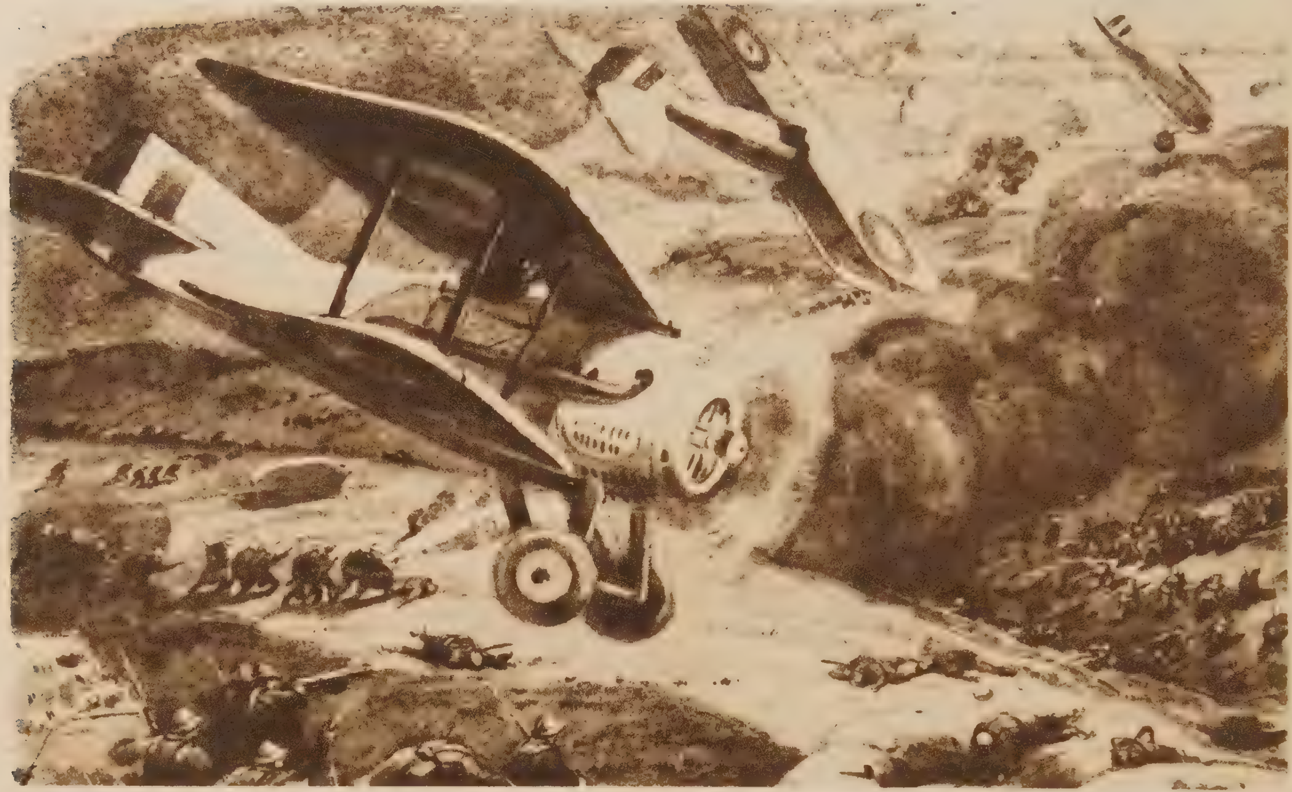
ZEPPELIN *in* FLAMES SHOT *Down By* GUNS -1916



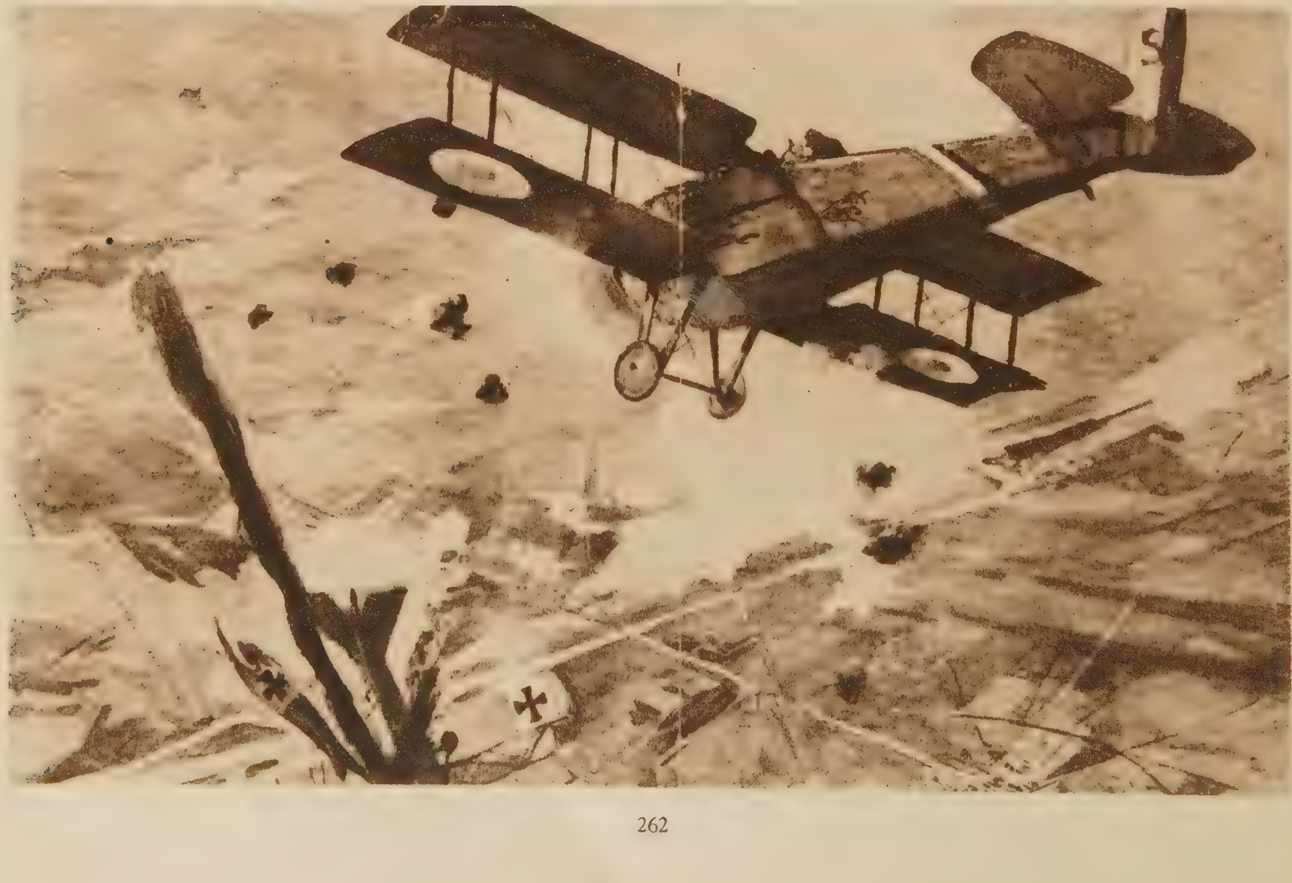
FRENCH ARTILLERY DEFENDING PARIS AGAINST RAIDS BY THE GERMAN ZEPPELINS

The deadly fire of the French Anti-Aircraft Guns is one of the brilliant records of the World War
Drawing by Georges Scott for *L'Illustration*, Paris.

"CAVALERIE *de* L'AIR" *in* DEADLY COMBAT—1917

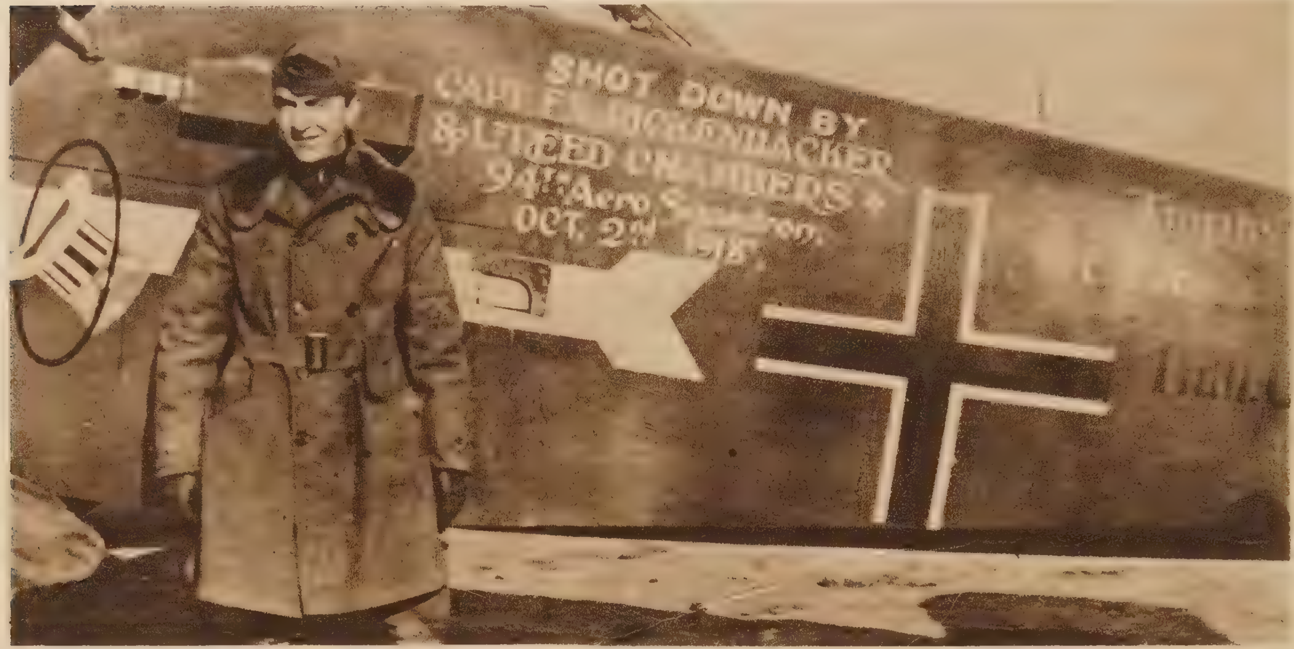


AIR BATTLES DISPLACE OLD-TIME CAVALRY IN WORLD WAR—Scenes such as these were enacted thousands of times all along the battle-fronts.—Drawings by War Artists for *L'Illustration*, Paris.



American GAS BOMBS *and* GUNNERS *in* ACTION—1918

GAS RAIDS AND ANTI-AIRCRAFT ATTACKS were continuous along all the battle-fronts in the World War. Here we see typical scenes from Official War Photographs of the United States Government.

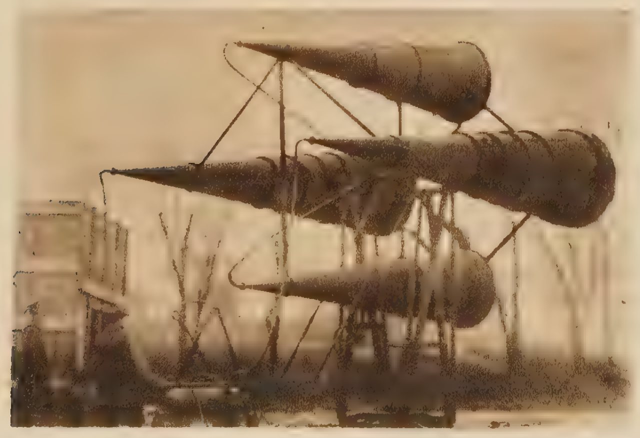

SHOT DOWN BY
CAPT. E. V. RICKENBACKER
& LT. REED CHAMBERS
94th Aero Squadron
OCT. 2nd 1918

AMERICA'S GREAT AIR DUELIST—"ACE OF ACES"—CAPTAIN EDWARD V. RICKENBACKER. The stories of Rickenbacker and the Flying Squadrons in the United States Army in France are classics that will pass down the ages—an epic volume in itself. We shall see him again with the Great War Aces on page 270.

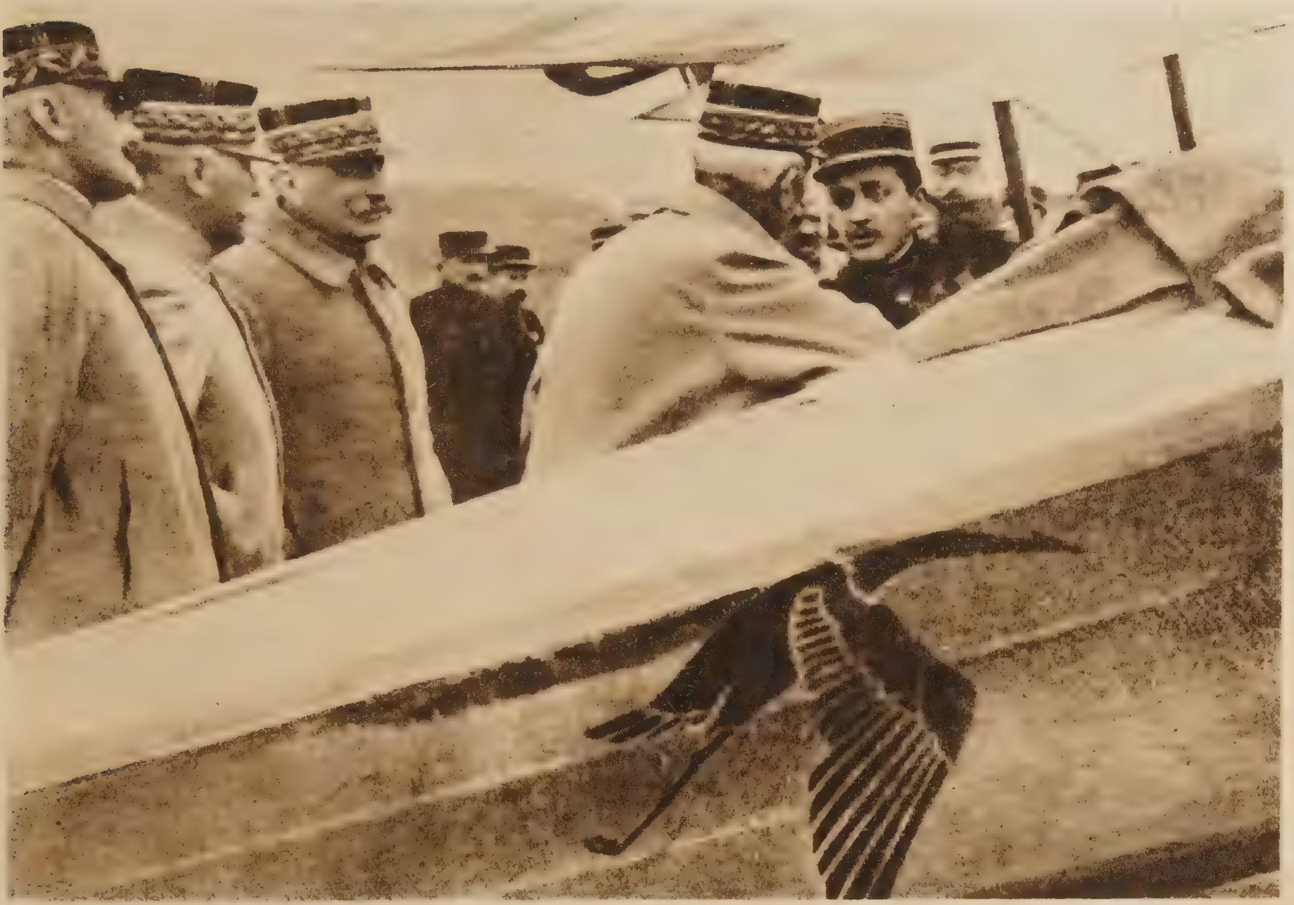
MONSTER BALLOONS READY FOR ACTION

SOUND DETECTORS BEHIND FRONT LINES

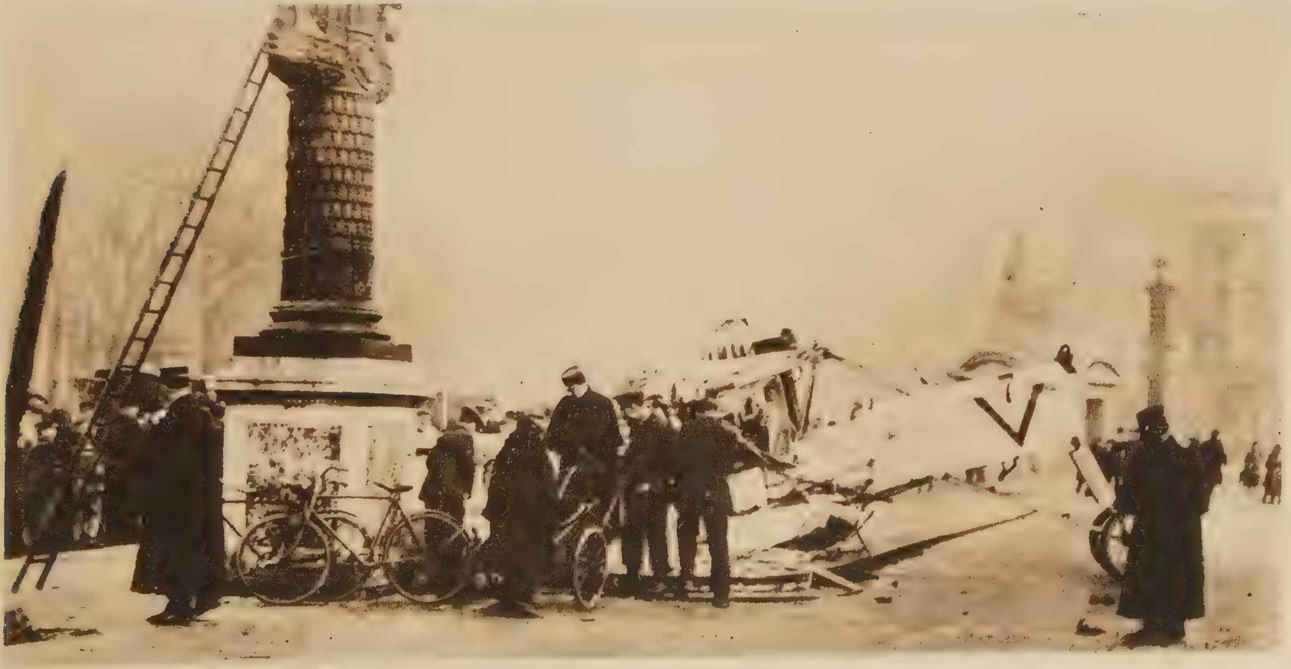
FIELD RADIO TALKING TO AIRPLANES



AVIATORS AWAITING CALL TO COMBAT



FRENCH GENERALS GREETING GUYNEMER, "THE MIRACULOUS"—He brought down 53 enemy planes—Eight times he was shot down from the clouds and finally lost in combat. We see him here with Generals Guillemin—Gerard—Foch—Lyautey. French War Photograph (below) of airplane which fell from clouds in Place de la Concorde in Paris during an air raid (1918).



DARE DEVIL AMAZES FIELD MARSHAL
Sir John French in Soubiran Collection

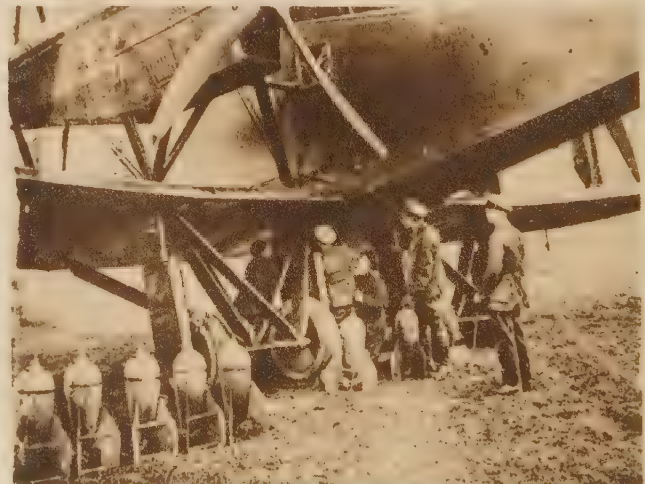
BRITISH FLYING PLANES OVER THE ALPS
Photograph Imperial War Museum at Kensington

WRECKED GONDOLA RAID ON ENGLAND
Photographs Imperial War Museum at Kensington

READY FOR ACTION ON BRITISH FRONT
Official Photograph in Whipple Collection

GERMAN PLANE FALLS IN FRENCH LINES

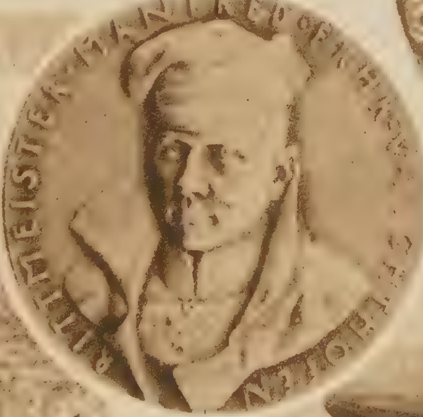
START BOMBING RAID ON GERMAN LINE



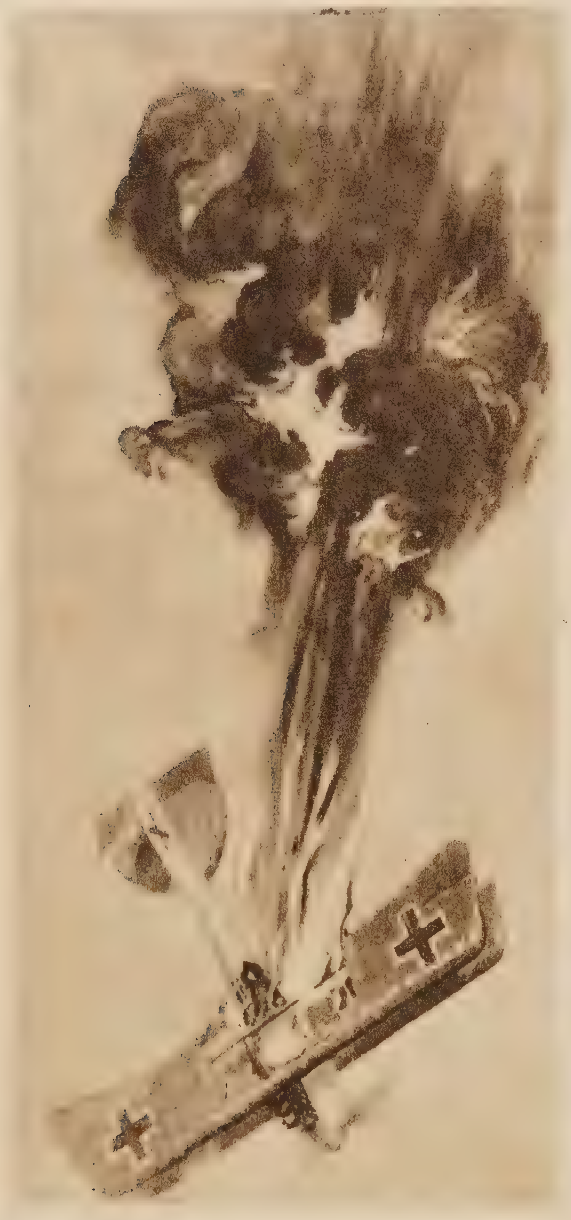
FIRST BOMBING RAID IN WORLD WAR—The Famous Lieutenant Immelmann, with the German Army but 25 miles from the gates of Paris, (September, 1914) appeared over the beleaguered capital every day at 5 o'clock with a shower of small bombs and dropped this laconic note: *"People of Paris! Surrender! The Germans are at your gates! Tomorrow you will be ours!"*

We present herewith records from the German War Collection: German soldiers transporting air wings (above)—Medal cast in commemoration of Max Immelmann (right)—Medal in honor of the great Richthofen and his "Flying Circus" (below)—Aerial Bomb being attached for raid (below)—German Zeppelin starting out on its raiding expedition (below)—German archives contain more than 200,000 Photographic Records of the World War.

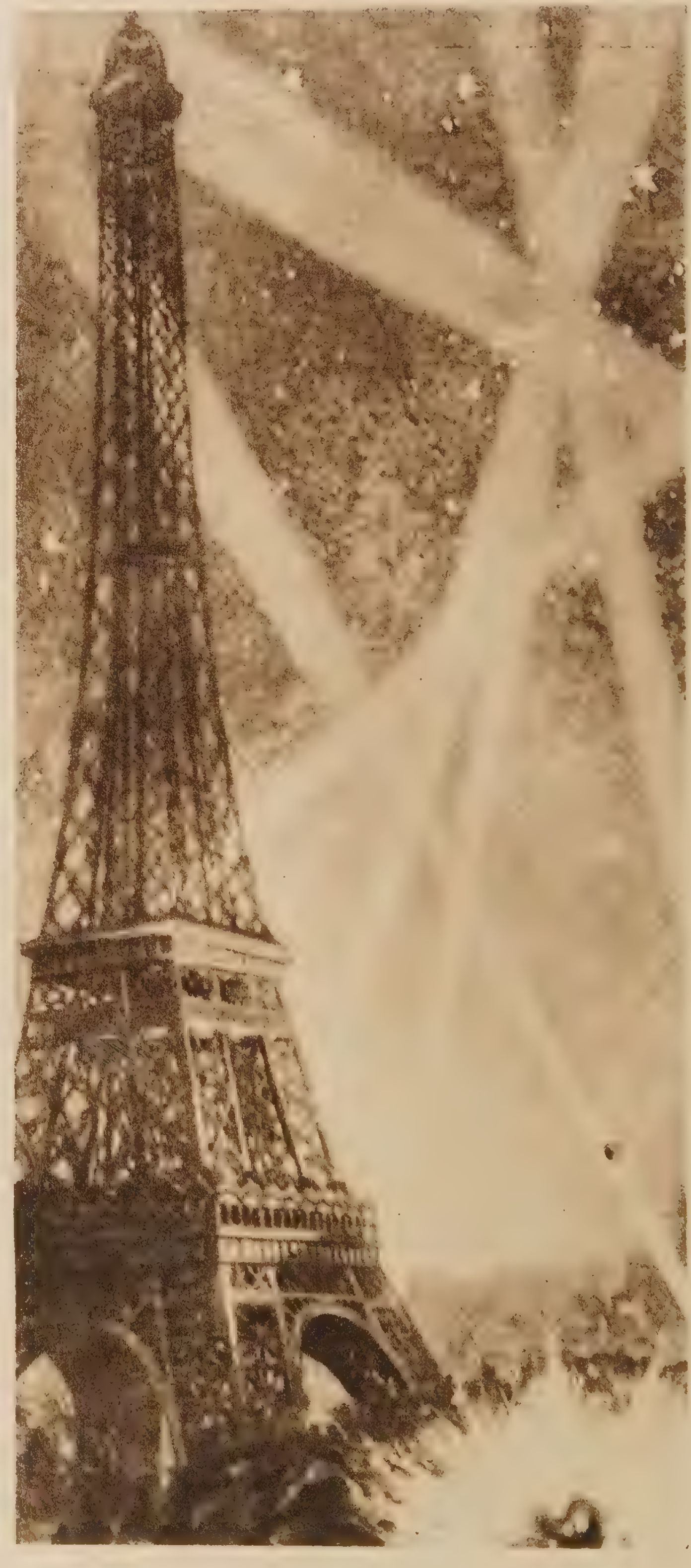
OBERLEUTNANT MAX IMMELMANN



BOMBARDMENT *of* PARIS *By the* GERMANS—1918



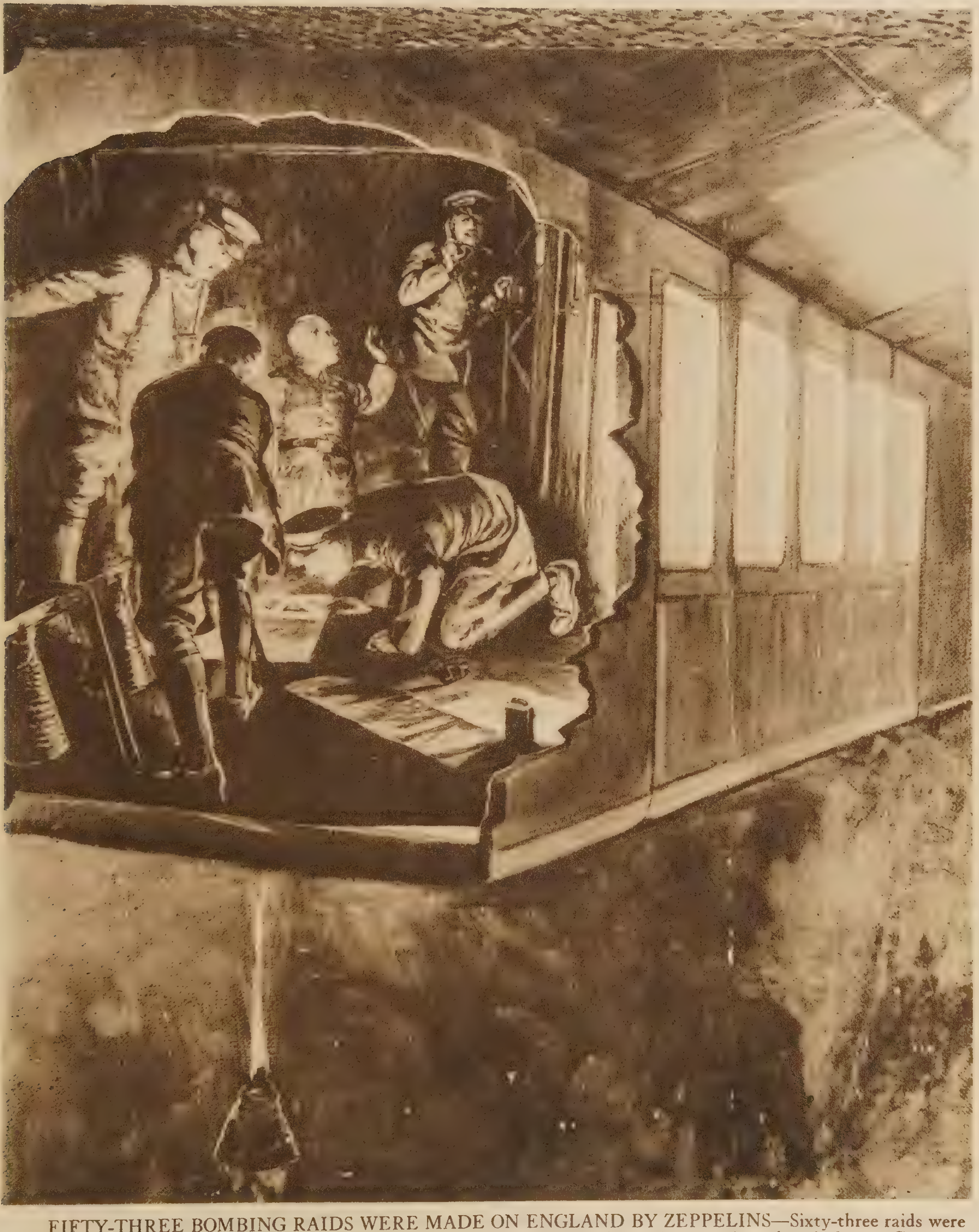
OFFICIAL RECORDS from Les Archives Photographiques d'Art et d'Histoire in Paris. Original Paintings are by Lieutenant C. E. Ruttan of the U. S. Navy Aviation Corps. Prints in the Collection of Sidney B. Veit in Paris.



OVER FIFTY AIR ATTACKS WERE MADE ON PARIS—The defense of the Capital by the famous French Escadrille, popularly known as the Cigognes, by reason of the Flying Stork painted on their airplanes, is the greatest epic in modern history.

This heroic corps brought down more than 300 German planes. It was composed of the greatest fighting men in France, led by the magnificent Rene Fonck who brought down 126 enemy planes (officially accredited with 75); Guynemer with 53—Pinsard 27—Dorme 23—Heurteaux 21—Deullin 20—Chaput 16—Putnam (American) 12—Baylies (American) 12—Tarascon 12—de la Tour 11—Parsons (American) 8—Auger 7—Gond 6—Borzecky 5—Sanglier 4—Brocard 3. The sign of the Flying Stork brought terror to the hearts of the Germans.

BOMBS DROP *from* ZEPPELIN *Over* ENGLAND—1918



FIFTY-THREE BOMBING RAIDS WERE MADE ON ENGLAND BY ZEPPELINS—Sixty-three raids were made by German airplanes. London was bombed twelve times by airship—nineteen times by airplane. Germany dropped 275 tons of bombs on England while England dropped 5,000 tons on Germany. Drawing in British Archives.

FAMOUS "ACE *of* ACES" *in the* WORLD WAR—1918

BRITISH ACE
BISHOP
72 VICTORIES

AMERICAN ACE
RICKENBACKER
26 VICTORIES

ITALIAN—BARACCA—34

AMERICAN ACE
LUFBERY
17 VICTORIES

BELGIAN ACE
THIEFFREY
10 VICTORIES

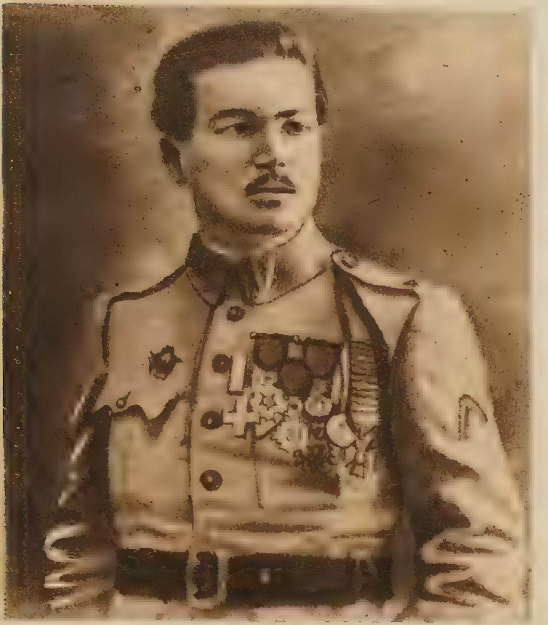
SEVEN HUNDRED ACES gained immortal fame as Air Fighters in the "World's First Battles in the Air." It is an epic volume in itself—an *Odyssey* that awaits its Homer.

We can present in these pages only the Ten First Aces of the Nations with their officially recorded victories. Behind them are the most magnificent tales of human bravery that the world has ever known.

The stories of the Royal Air Force—the French Cigognes—the Escadrille Lafayette—the American Squadrons—Americans with the British and the French Flying Corps—the Italians—Belgians—Russians—Roumanians—Austrians—and the daring of the Germans are thrilling records of heroism that must be left to future historians.

AMERICAN ACE
FRANK LUKE
21 VICTORIES

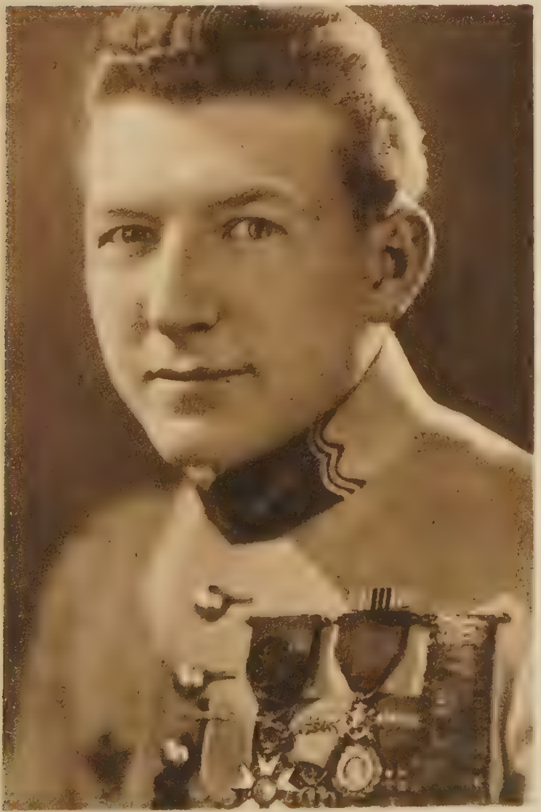
COMBATANTS *in* WORLD'S *Great* AIR BATTLES—1918

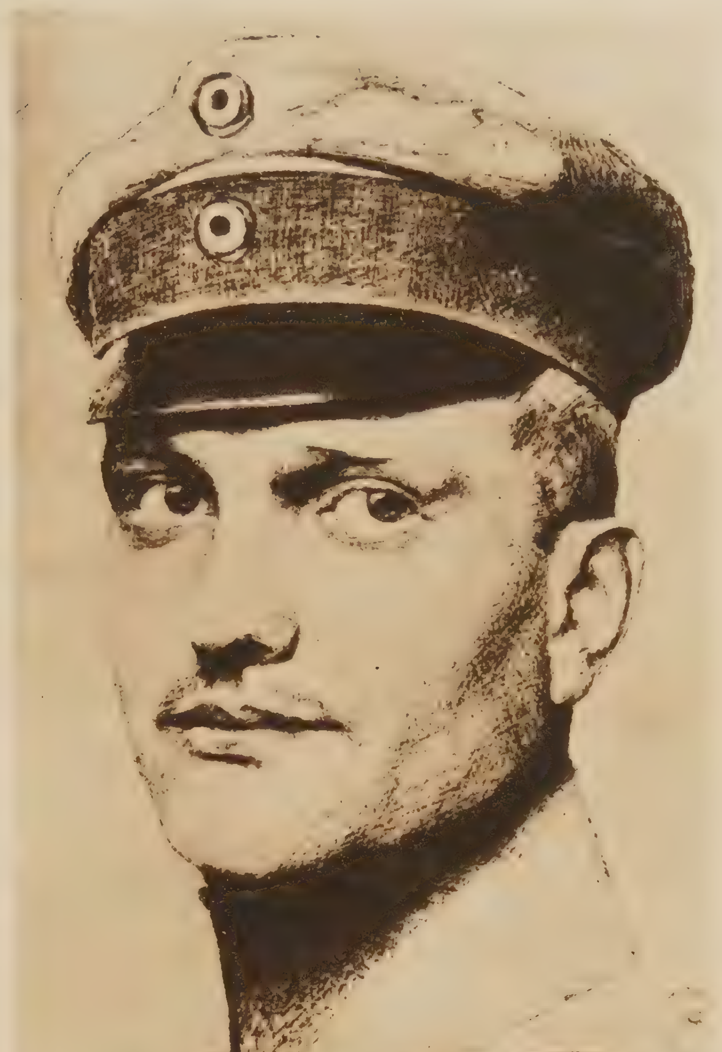


FRENCH ACE—RENE FONCK
WITH 75 VICTORIES

"Like Knights of Old, they ventured forth into the combats of the clouds—these Cavaliers of the Skies."

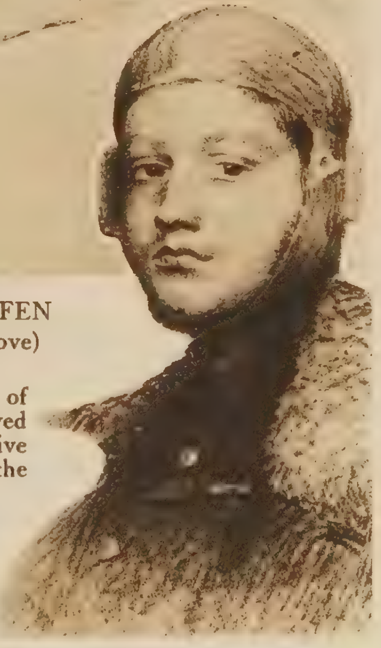
FRENCH ACE—NUNGESSER
WITH 43 VICTORIES





GERMAN ACE—RICHTHOFEN
WITH 80 VICTORIES (Above)

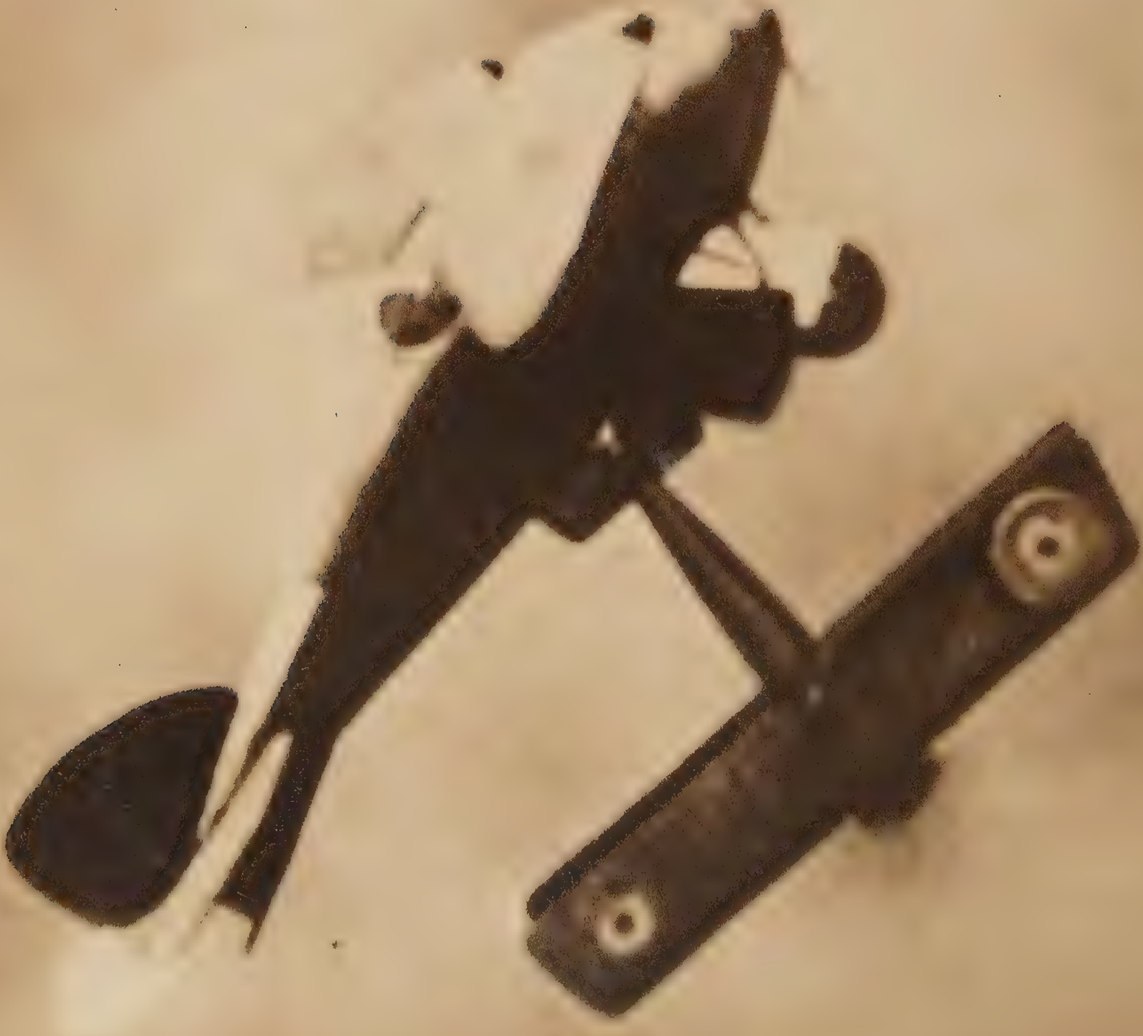
Photographs and Etchings of all the Famous Aces are preserved in the Archives of their respective Governments—the Gallery of the Seven Hundred Heroes.



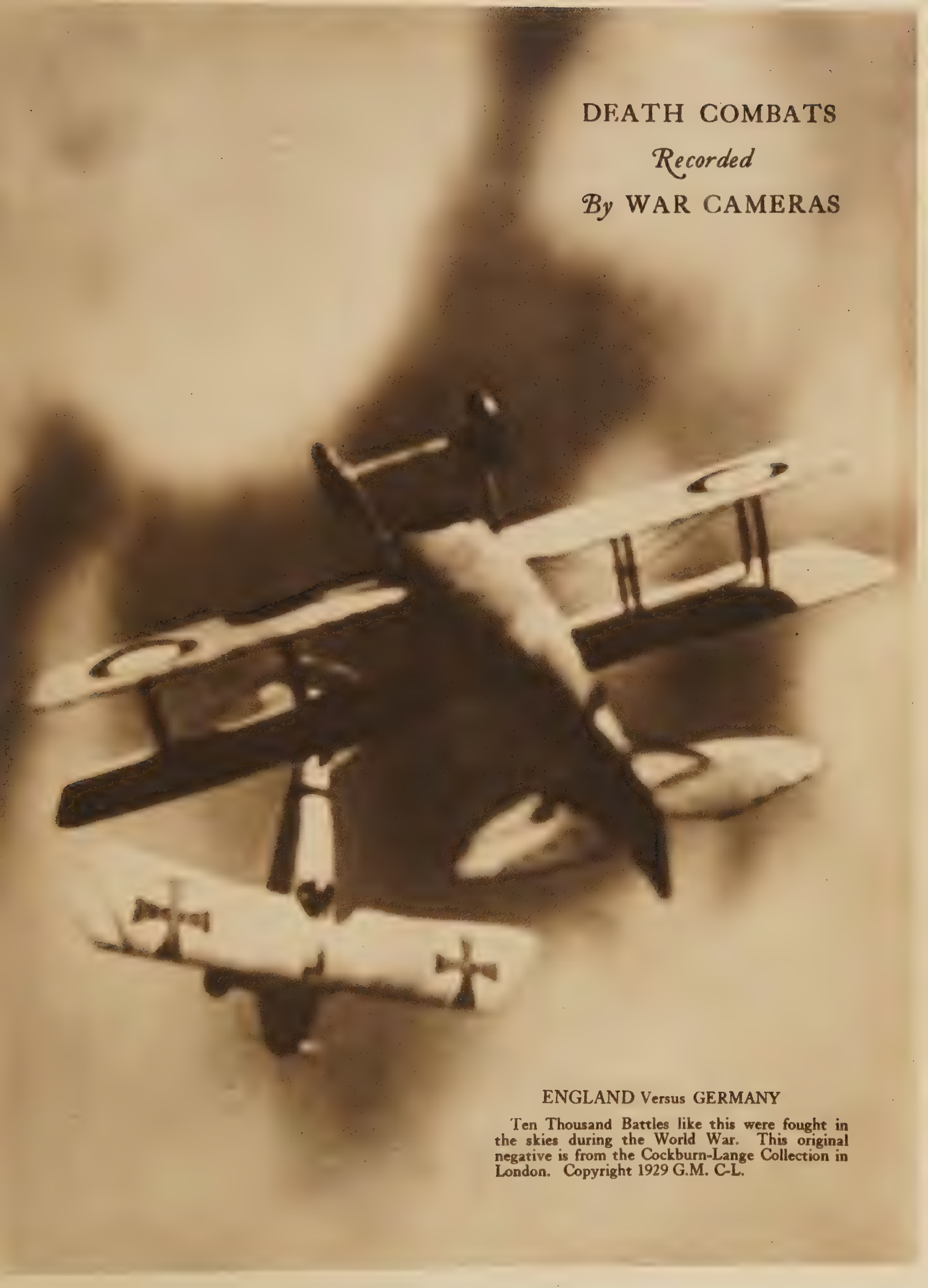
MIRACULOUS GUYNEMER
of France (right)
WITH 53 VICTORIES

Greatest AIR BATTLE PHOTOGRAPHS *Ever Taken*—1918

WE RECORD herewith two priceless photographs from the fifty-seven plates in the famous COCKBURN-LANGE COLLECTION privately owned in Great Britain, from several hundred exposures that failed to register. These photographs were taken during actual combat in the World War by a pilot of the Royal Air Force who was subsequently killed. The camera was fixed on a special mounting in the fuselage of the plane by a mechanical contrivance that automatically snapped the photograph at the first press of the gun triggers. The result is the most valuable collection of aerial combat photographs in existence.

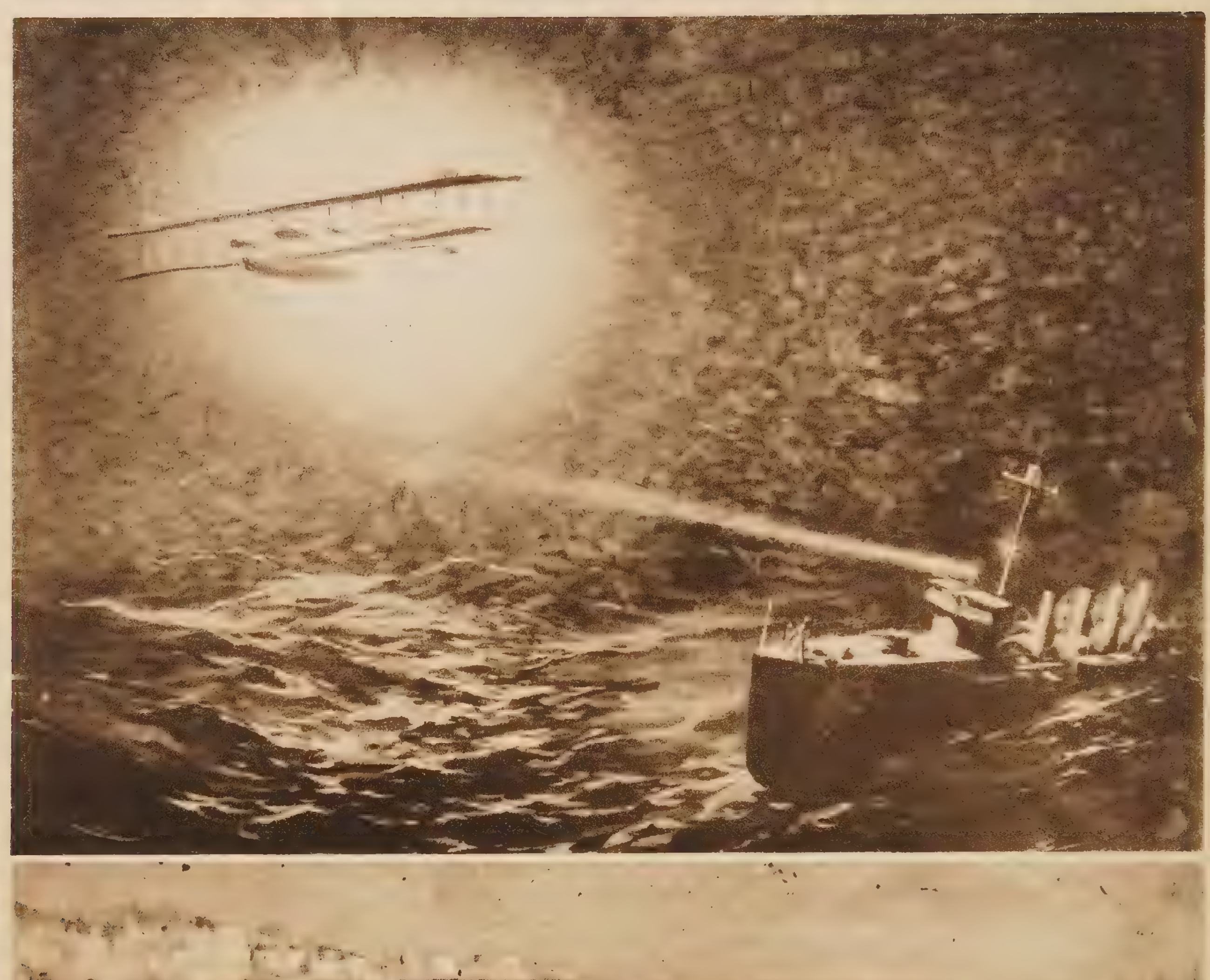


DEATH COMBATS
Recorded
By WAR CAMERAS



ENGLAND Versus GERMANY

Ten Thousand Battles like this were fought in the skies during the World War. This original negative is from the Cockburn-Lange Collection in London. Copyright 1929 G.M. C-L.



FIRST AIRPLANE FLIGHT OVER ATLANTIC OCEAN—The N.C.-4 (Navy Curtiss seaplane), in command of Lieut. Commander Albert C. Read, made the First Transatlantic Flight from New York to Plymouth, England, via Trepassey Bay, Newfoundland, the Azores and Lisbon, Portugal (May 8-31, 1919). Official paintings by C. E. Ruttan in Navy Department, Washington.

PART XVII

CONQUESTS *of* CONTINENTS *and* OCEANS

CRUSADERS *of the* AIR *on* EPOCH-MAKING ADVENTURES

GREAT ADVENTURES follow in the wake of the World War — a period of conquest of the continents and the oceans (1919-1927). This is the log of the modern Argonauts: Cortinez flies across Andes Mountains (April 5, 1919); N.C.4, under Commander Read, flies from Newfoundland to England, via Azores — 3,925 miles (May 8–31, 1919); Hawker and Grieve attempting Transatlantic flight rescued at sea (May 18, 1919); Roget makes non-stop flight Paris to Morocco—1,365 miles (May 24, 1919).

These events all take place on Hundredth Anniversary of First Steamship to Cross the Atlantic. First Non-Stop Flight Across the Atlantic is made by Alcock and Brown from Newfoundland to Ireland—1,960 miles (June 14–15, 1919); First Transatlantic Flight in Airship by British R-34 from Dublin to New York (July 2–6, 1919) with return voyage to England—total distance 6,400 miles; Locatelli makes First Flight Across South American Continent (July 30, 1919) from Buenos Aires to Valparaiso; American Army fliers make Round-the-Rim Flight over the United States boundaries—9,823 miles July 24–November 9, 1919); First Flight from England to Australia by Captain Ross Smith—11,500 miles (November 12–December 10, 1919).

The entries in this modern log come with such rapidity that we can only indicate the high spots: Van Rynzvold flies from Cairo to Cape Town—12,000 miles (February 14–May 31, 1920); Army fliers under Capt. Street from New York to Alaska—9,000 miles (July 15, August 24, 1920); First through flight of Air Mail from San Francisco to New York (February 22–23, 1921); First Flight Across South Atlantic from Portugal to Brazil by Cabral and Coutinho (March 30–June 17, 1922); Hinton flies from New York to Rio de Janeiro—5,581 miles (August 17, 1922–February 8, 1923); Doolittle from Jacksonville to San Diego in 22 hours, 35 minutes (September — 5, 1922); First Transatlantic Non-Stop Flight by Macready and Kelly from New York to San Diego—2,520 miles (May 2–3, 1923); First Non-Stop Flight from Gulf of Mexico to Canada by Crocker—1,400 miles (May 26, 1923); Dirigible Dixmude Crosses Mediterranean from Marseilles to Sahara and return—4,500 miles (September 25–30, 1923).

The First Round-the-World Flight is made by American Army planes—27,553 miles (April 6–September 28, 1924); d'Oisy and Vesin fly from Paris to Tokio—12,350 miles (April 24–June 9, 1924); First Dawn-to-Dusk Flight New York to San Francisco by Maughan (June 23, 1942); Zanni from Amsterdam to Tokio (July–October, 1924); Vanderhoof from Holland to Java—9,300 miles (October 1–November 27, 1924); Shenandoah (ZR-1) makes Transcontinental Flight—9,000 miles (October 7–25, 1924); Los Angeles (ZR-3) makes First Airship Flight from Germany to America—5,060 miles (October 12–15, 1924).

Rome to Japan, via Australia, and return—34,000 miles, by De Pinedo (April 31–November 7, 1925); California to Hawaii—1,700 miles, by Rodgers (August 31–September 10, 1925); London to Capetown and return—16,130 miles, by Cobham (November 15, 1925–March, 1926); Spain to Argentina—6,230 miles by Franco (January 22–February 10, 1926); Madrid to Philippine Islands—11,000 miles by Loriga and Gallarza (April 5–May 13, 1926).

First Airplane Flight over North Pole, from Spitzbergen and return, is made by Byrd and Bennett (May 9, 1926); First Airship flies over North Pole from Spitzbergen to Alaska—2,700 miles with Amundsen, Ellsworth and Nobile (May 11–14, 1926); London to Australia and return—28,000 miles by Cobham (June 30–October 1, 1926); France to Madagascar and return—20,000 miles by Bernard (October 18, 1926–June 6, 1927); Paris to Persia non-stop—3,313 miles by Coste and Rignot (October 28–29, 1926); Switzerland to Cape Town, South Africa—12,000 miles by Mittelholzer (December 6, 1926–February, 1927); Pan-American Good-Will Flight of U. S. Army—20,000 miles (December 21, 1926–May 2, 1927); Four Continent Flight—from Italy to Africa, South and North America, and return across Atlantic—25,000 miles by De Pinedo (February 13–June 16, 1927). This heroic period closes with the tragedy of Nungesser and Coli lost in an attempt to cross the Atlantic from France to America (May 8, 1927).

First AIR MAIL *from* NEW YORK *to* WASHINGTON—1918

UNITED STATES
US AIR MAIL SERVICE
397 UNITED STATES

AMERICA'S GREAT AIR MAIL SERVICE began (May 15, 1918) when the first regular service was established between New York and Washington. President and Mrs. Wilson (shown above leaving Bolling Field) were in the official party which witnessed the first flights. In circle (right) Major R. H. Fleet (left), who flew the first mail plane from New York to Washington, is explaining the route to Lieut. George L. Boyle, who flew the return trip. Official photographs from Signal Corps, U.S.A.

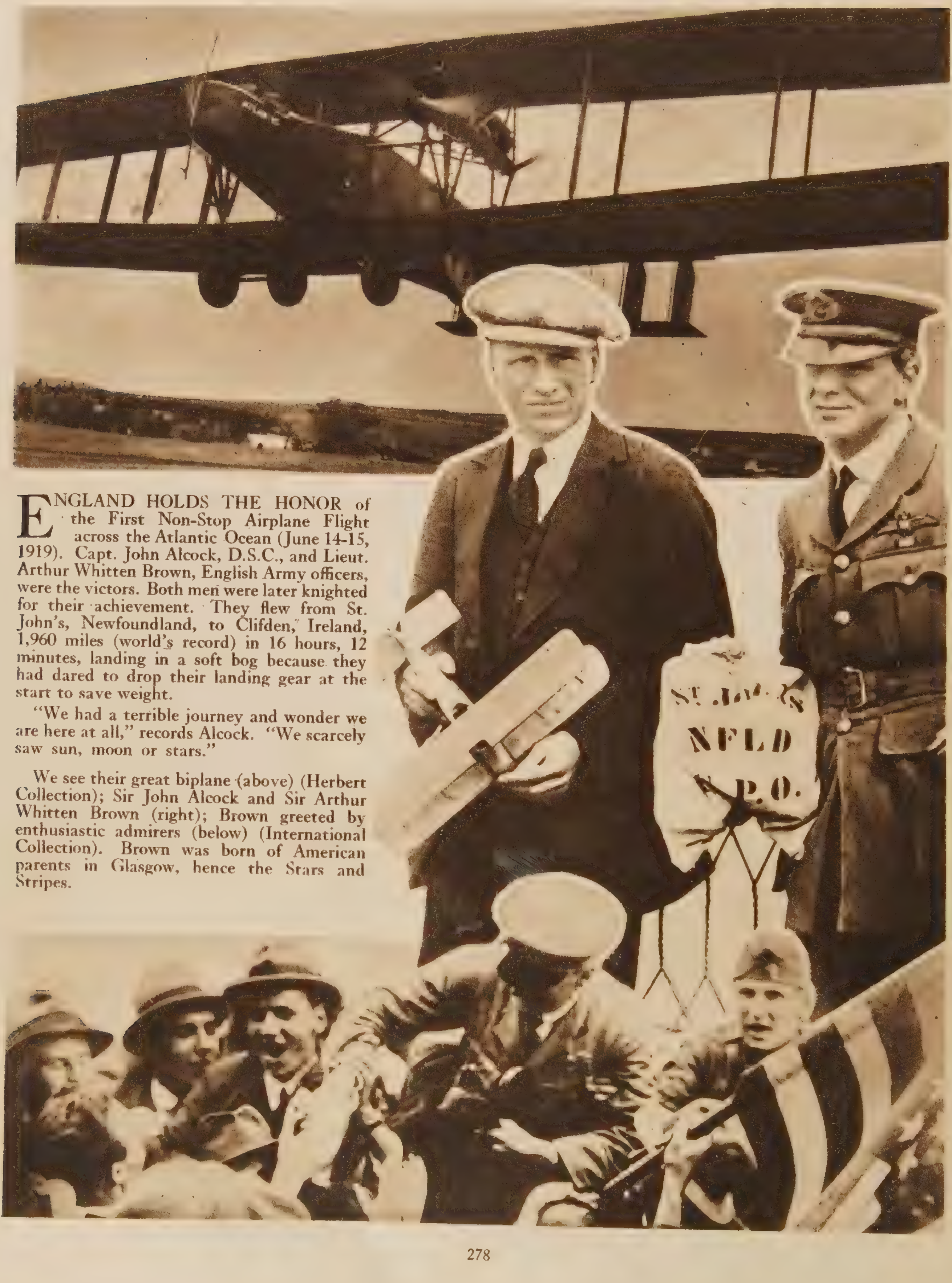
FIRST ATTEMPT AT TRANSATLANTIC NON-STOP FLIGHT—Harry G. Hawker and Lt. Com. Mackenzie Grieve, of England, first tried to fly the Atlantic from St. John's, Newfoundland, to London (May 18, 1919). Forced down by engine trouble after flying straightaway 1,100 miles in 14 hours, 31 minutes, they were picked up by the Danish steamer *Mary*, which had no wireless. Given up for lost, the *Mary* signalled off Scotland that they were safe aboard (May 25, 1919). We see Hawker riding in London procession in their honor (below). Keystone Collection; Grieve portrait (in circle) in Pathe News Collection.

First AIRPLANE FLIGHT *Across the* ATLANTIC *Ocean*—1919

HISTORIC SCENES IN LONDON The N.C.-4 was victorious (May 8-31, 1919) among the three United States Navy seaplanes that started to fly the Atlantic together. N.C.-1 commanded by Lt. Com. P. N. L. Bellinger, and N.C.-3, Commander John H. Towers, were both forced down to the sea before reaching the Azores and their crews rescued by destroyers.

We find (above) Lt. Commander Read on the shoulders of American soldiers and sailors on reaching London (Paul Thompson Collection). The Prince of Wales congratulates Read (right) (Underwood Collection). The intrepid N.C.-4 crew (below)—Lieut. E. F. Stone, Lieut. Walter Hinton, Lt. Com. Read, Ensign H. C. Rodd, Chief Machinist's Mate E. F. Rhoades (Brown Collection).

First NON-STOP FLIGHT *Across* ATLANTIC—1919

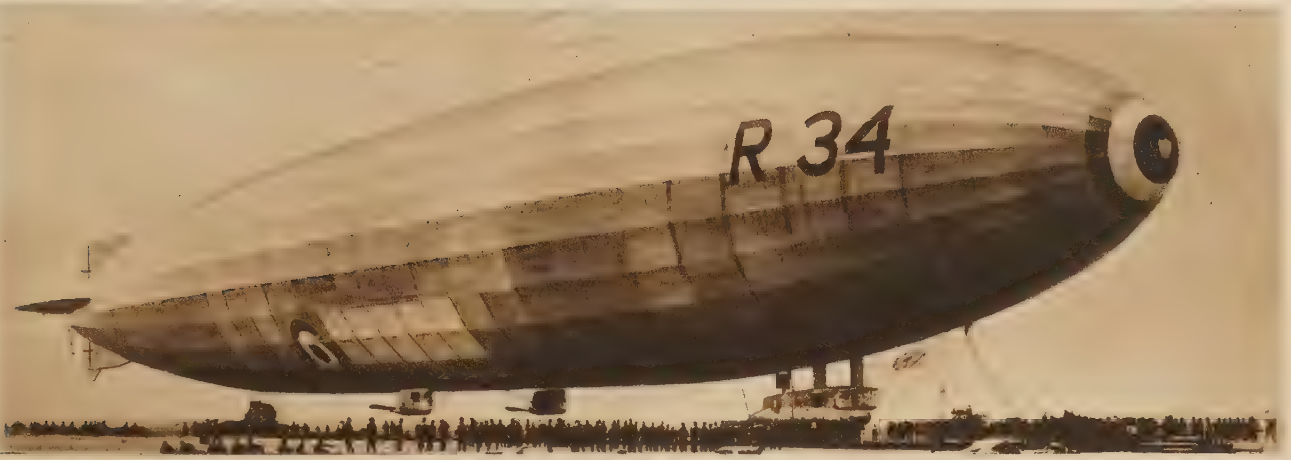


ENGLAND HOLDS THE HONOR of the First Non-Stop Airplane Flight across the Atlantic Ocean (June 14-15, 1919). Capt. John Alcock, D.S.C., and Lieut. Arthur Whitten Brown, English Army officers, were the victors. Both men were later knighted for their achievement. They flew from St. John's, Newfoundland, to Clifden, Ireland, 1,960 miles (world's record) in 16 hours, 12 minutes, landing in a soft bog because they had dared to drop their landing gear at the start to save weight.

"We had a terrible journey and wonder we are here at all," records Alcock. "We scarcely saw sun, moon or stars."

We see their great biplane (above) (Herbert Collection); Sir John Alcock and Sir Arthur Whitten Brown (right); Brown greeted by enthusiastic admirers (below) (International Collection). Brown was born of American parents in Glasgow, hence the Stars and Stripes.

First TRANSATLANTIC VOYAGE *in* AIRSHIP—1919

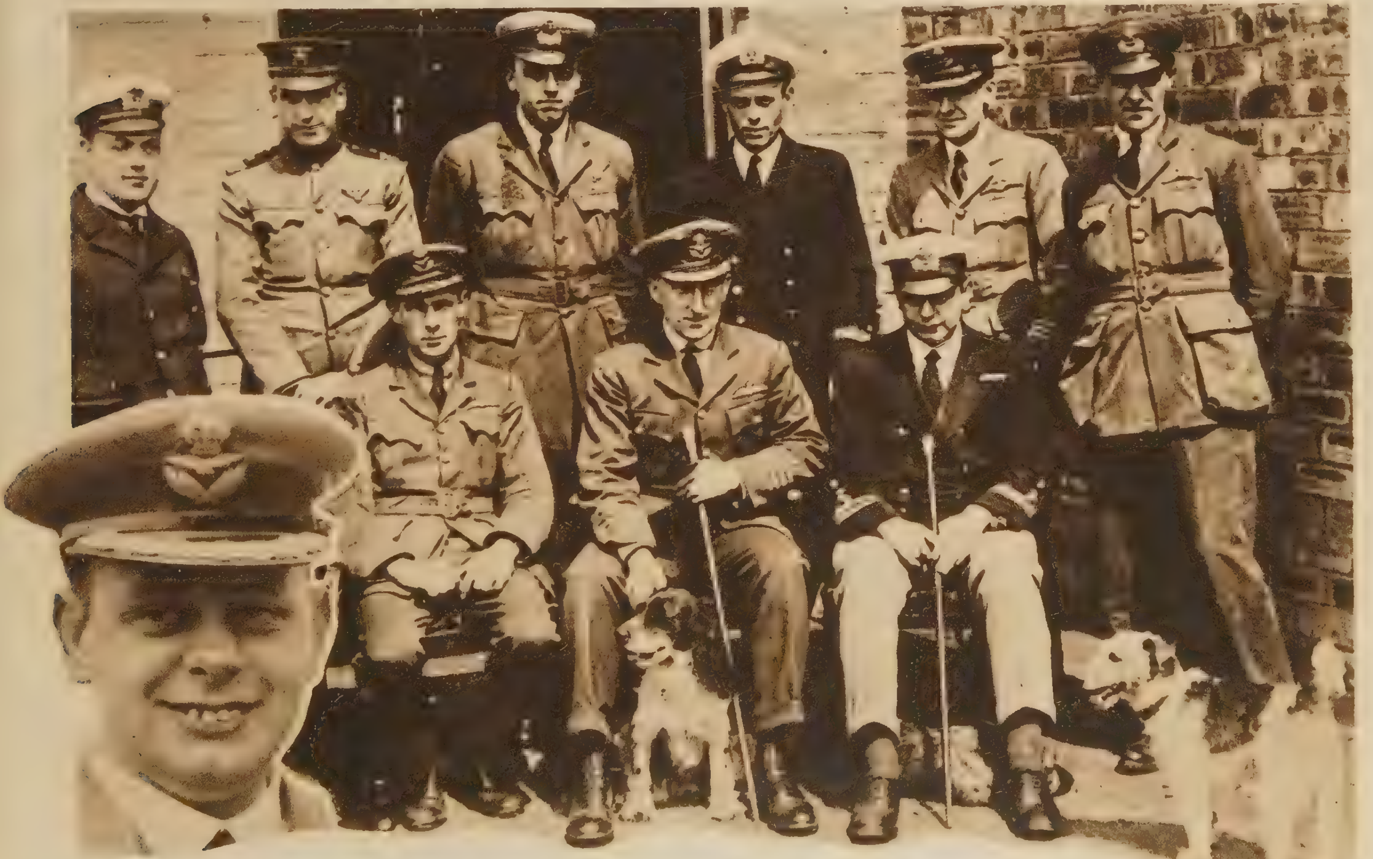


GREAT BRITISH AIRSHIP R-34 MOORED AT ROOSEVELT FIELD IN AMERICA AFTER HISTORIC FLIGHT
Official Photograph in Collection of the Signal Corps, U.S.A.

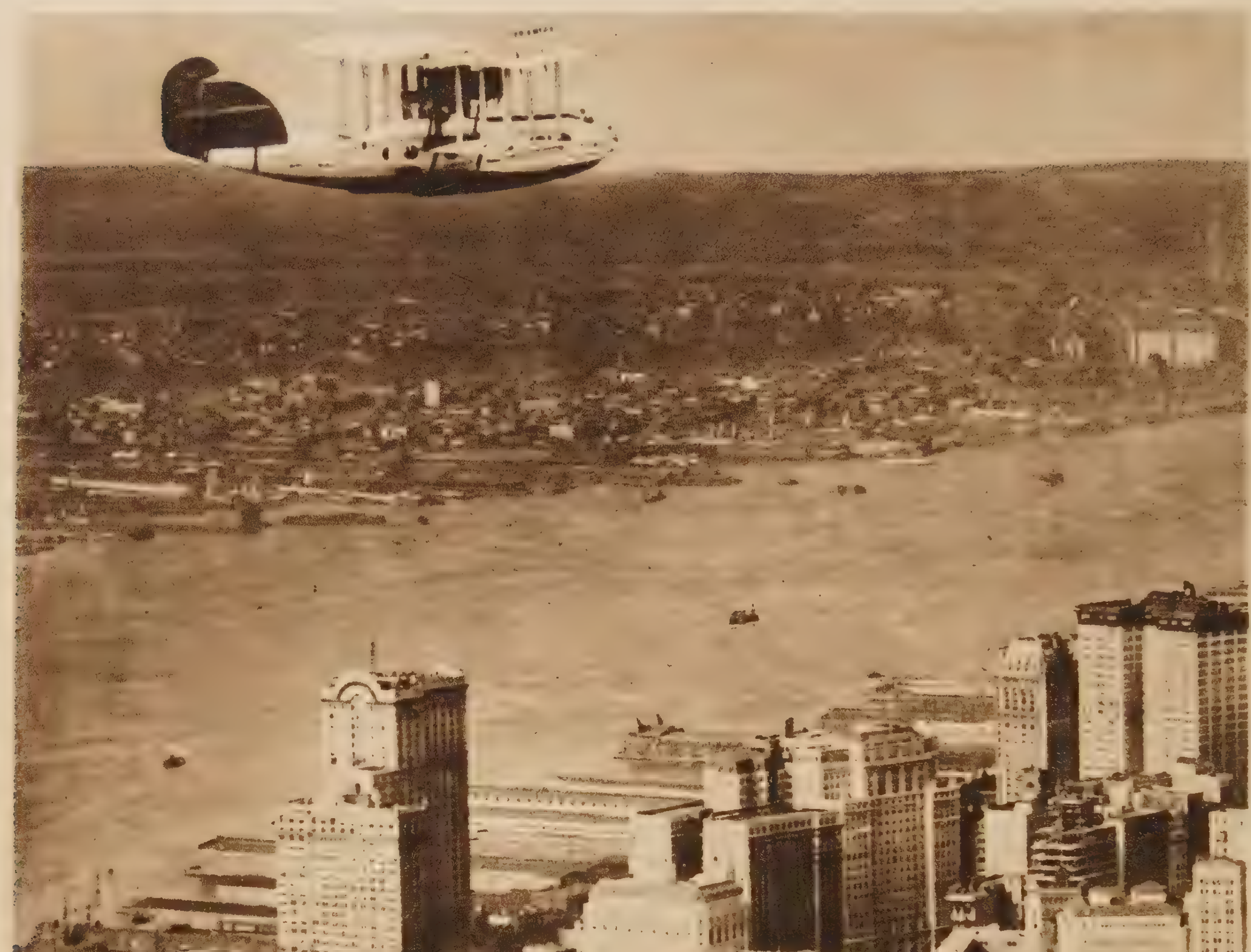
ENGLAND IS FIRST TO FLY ATLANTIC OCEAN WITH AIRSHIP—The R-34, 643-foot rigid dirigible of the British Army, crossed from East Fortune, Scotland, to Roosevelt Field, Mineola, New York, 3,130 miles in 108 hours, 12 minutes, making a new world's endurance record (July 2-6, 1919). She made the return trip to Pulham, England, 3200 miles, in 74 hours, 56 minutes, breaking the world's record for lighter-than-air (July 9–12, 1919).

Major G. H. Scott, A.F.C., was in command; Lieut. Commander Zachary Lansdowne, O.B.E., U.S.N., was the American observer westbound and Major William S. Hensley, U.S.A., eastbound. The great ship had but a half hour's supply of gasoline left in her tanks when she reached Roosevelt Field. Her round trip was an event of world importance.

MASTER MINDS OF THE R-34 ON TRANSOCEANIC AIR VOYAGE (Below)—Left to right: (standing) Captain Combes; Lieut. Commander Lansdowne; Second Lieut. R. D. Durrant, wireless officer; Capt. G. S. Greenland, first officer; Major J. E. M. Pritchard, Air Ministry; Second Lieut. J. D. Shotter, engineer officer; (seated) Major G. G. S. Cooke, D.S.C., navigating officer; Colonel Hunt, commanding officer East Fortune Flying Field, near Edinburgh; Major G. H. Scott, A.F.C., commander of the R-34. Photograph in Underwood Collection.



First PASSENGER AIRLINE *Inaugurated in* AMERICA—1919



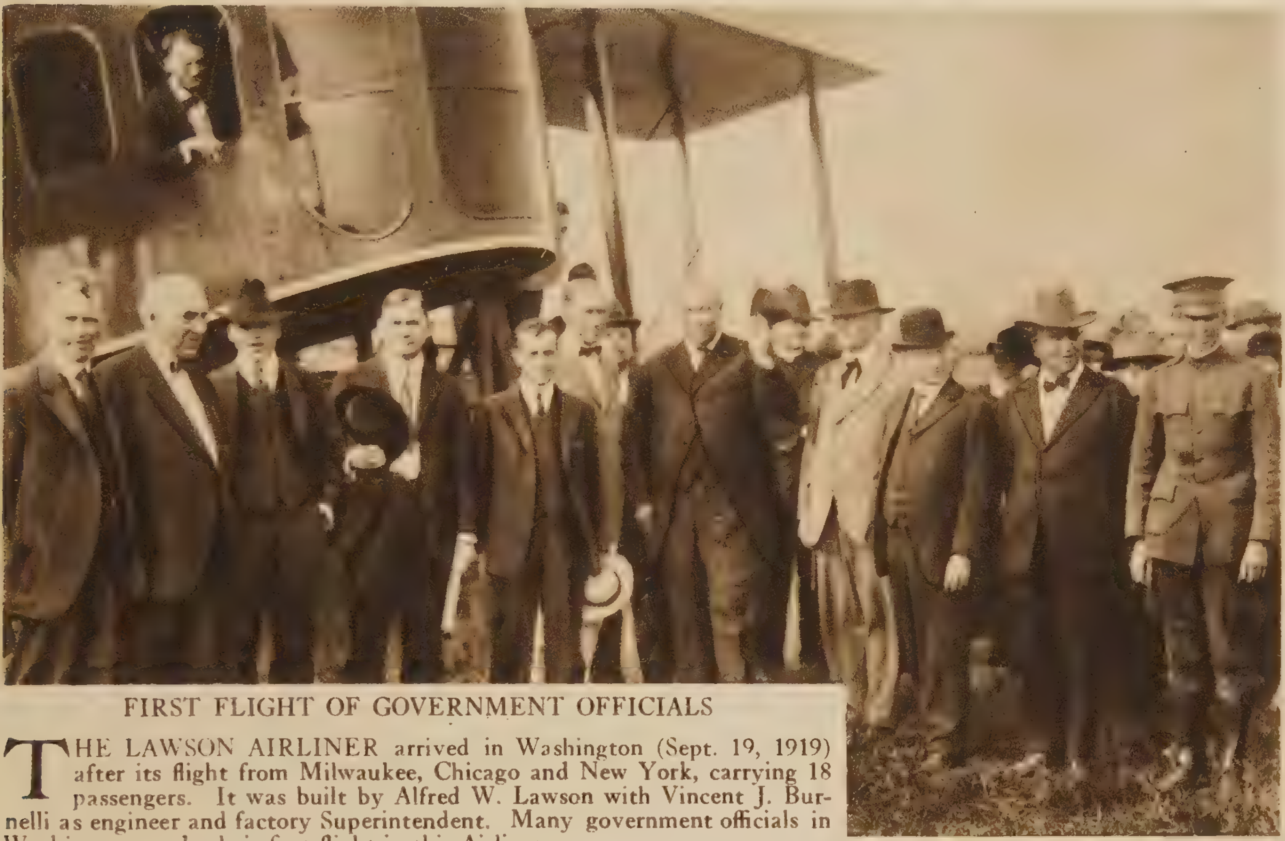
NEW YORK-ATLANTIC CITY AIRLINER OVER THE HUDSON

AN IMPORTANT DAY IN AMERICAN AVIATION—The first Airliner leaves New York for Atlantic City with the nation's first air passengers on a regularly operated flying route (May 3, 1919). Robert Hewitt was the pilot, and his passengers were Mrs. J. A. Hoagland and Miss Ethel Hodges of New York.

Inglis M. Uppercu (left), long prominent in aviation and president of the Aeronautical Chamber of Commerce (1922), headed the air transport line conducting this service.

Assistant Postmaster-General Otto Praeger used one of its planes to first deliver mail to a ship out at sea (August 14, 1919). C. J. Zimmerman was the pilot; he also piloted the first plane to fly from New York to Havana and return (1919). This inaugurated America's first international passenger air service between Miami, Florida, and Havana, Cuba, (August, 1919), and in eighteen months these large flying boats safely flew 22,000 passengers. We present (foot of Page 281) a group of New York bankers who flew to Havana on the aerial cruiser "Ponce de Leon." Left to right—Percy G. Rockefeller—W. G. Brady—R. L. Farnham—E. P. Swenson—Guy Carey—Charles E. Mitchell—Lee Olwell. Photographs in Uppercu Collection. Portrait © Blank & Staller.

AMERICA'S *First Great* AIRLINER—18 PASSENGERS—1919



FIRST FLIGHT OF GOVERNMENT OFFICIALS

THE LAWSON AIRLINER arrived in Washington (Sept. 19, 1919) after its flight from Milwaukee, Chicago and New York, carrying 18 passengers. It was built by Alfred W. Lawson with Vincent J. Burnelli as engineer and factory Superintendent. Many government officials in Washington made their first flight in this Airliner.

This momentous flight might have changed the entire history of the world. The vote on America's entrance into the League of Nations was about to be taken. If the airliner had crashed, killing the Senators on board, President Wilson would have had enough votes to have entered the League.

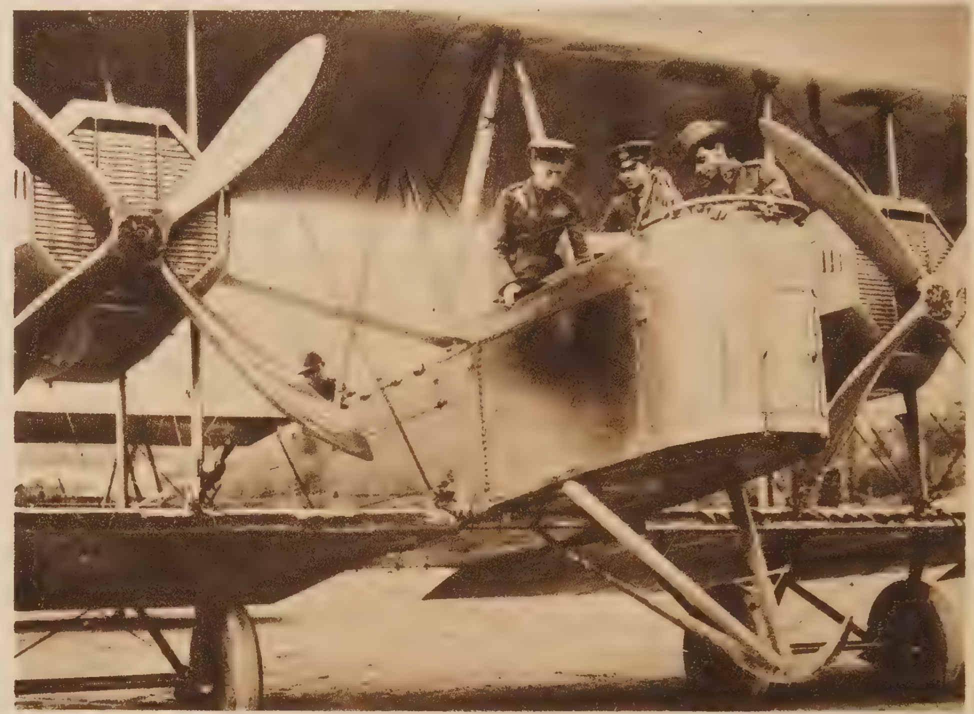
In the group (above) the second figure from the left is President (then Senator) Warren G. Harding of Ohio. Reading on to the right, the others are Senator Charles L. McNary of Oregon—Senator Charles B. Henderson of Nevada—Secretary of War Newton G. Baker—Senator Edwin S. Johnson of South Dakota—Capt. Charles J. Glidden—Senator Hoke Smith of Georgia—Rev. John Cavanaugh, President University of Notre Dame—Senator Porter J. McCumber of North Dakota—Senator William F. Kirby of Arkansas—Senator A. O. Stanley of Kentucky. (Horace B. Wild collection)

VINCENT BURNELLI (Below)

First AIRPLANE *Flight*—ENGLAND *to* AUSTRALIA—1919

SIR ROSS SMITH

SIR KEITH SMITH



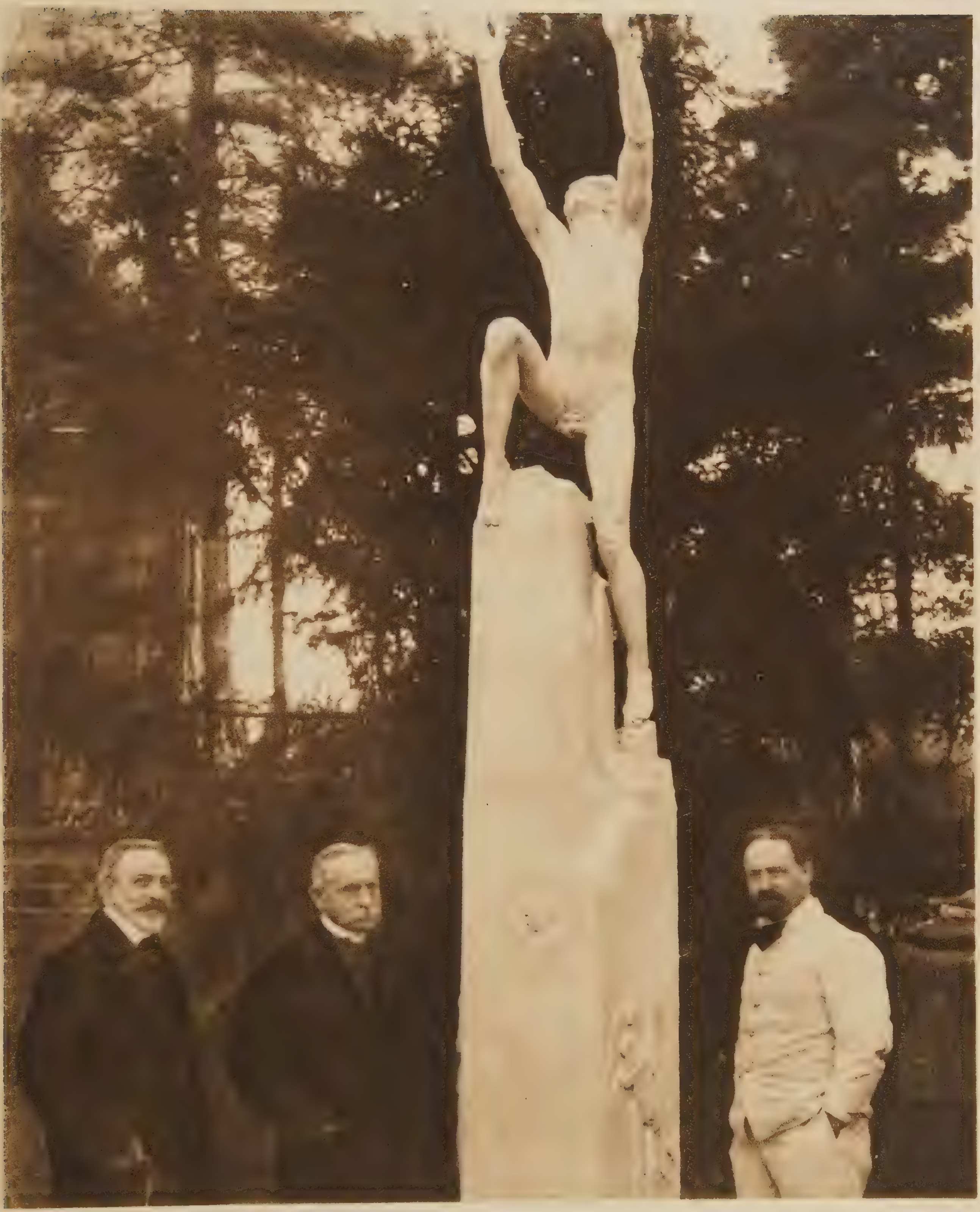
WINNERS OF AUSTRALIAN GOVERNMENT PRIZE OF $50,000—Captain Ross Smith, M.C., D.F.C., A.F.C., and three companions—Lieut. Keith M. Smith, his brother, and Sergeants W. H. Shiers and J. M. Bennett—were first to fly from England to Australia (November 12-December 10, 1919). They flew from London to Port Darwin, making numerous stops across Europe and Asia and in the south sea islands, 11,500 miles in 29 days, passing in India a French pilot named Poulet, who had a start of several thousand miles.

The Smiths won the $50,000 prize offered by the Australian Government and later were knighted. The romantic and adventurous air voyage had many thrills, one of the most notable being the departure from the heavy mud at Surabaya, Java, over a thousand feet of bamboo mats commandeered from nearby homes. Photographs in International

FIRST ROUND-THE-RIM FLIGHT IN AMERICA (right)—Lieut. Col. R. S. Hartz and three comrades of the U. S. Army Air Corps (July 24-November 9, 1919) made the longest flight that had been attempted in this country—9,823 miles, a complete circuit of the United States from Bolling Field, Washington, over 31 states and twice traversing the continent.

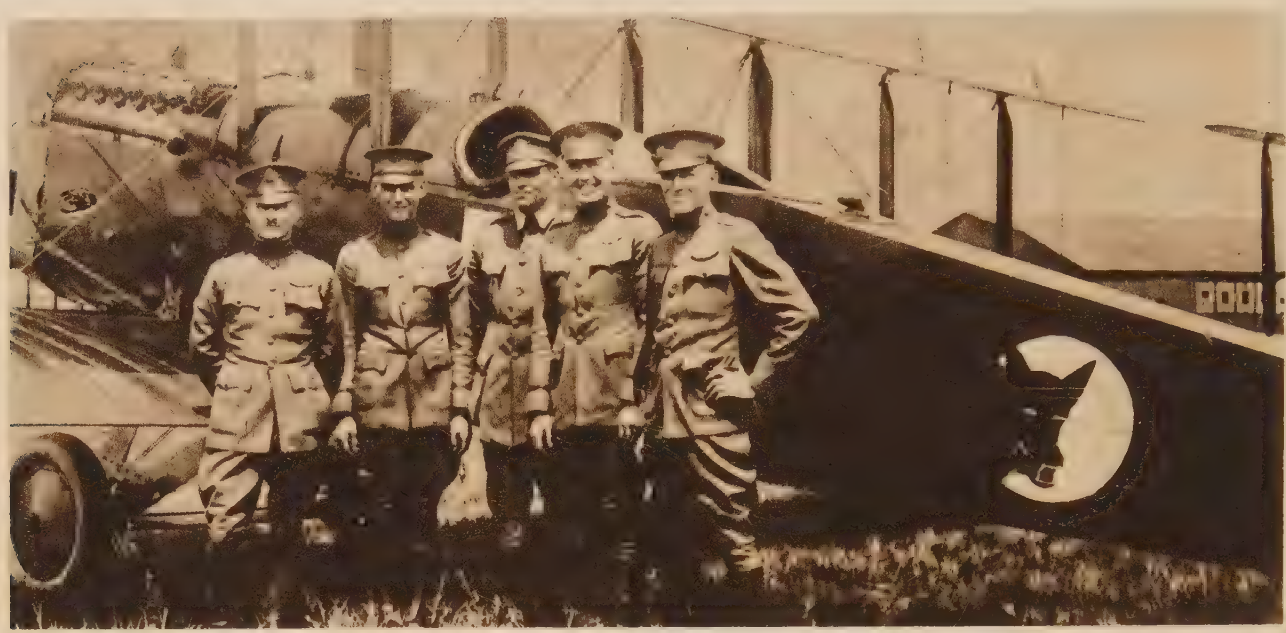
With Col. Hartz were Lieut. E. E. Harmon, Sergeants John Harding, Jr., and Jerry Dubois. They passed over or near 95 cities, 29 national forests, 36 mountain ranges and noted peaks, 88 rivers and portions of 48 gulfs, bays, seas and lakes. Official photograph (left) from the U. S. Army Air Corps.

AROUND
AMERIC
FLIG
BOLLING FI



MONUMENT TO WILBUR WRIGHT AT LE MANS, FRANCE—Dedicated (July 17, 1920). Scene at studio of Paul Landowski, sculptor. We here meet Sidney B. Viet (left), President Paris Chapter, National Aeronautic Association—Baron d'Etournelles de Constant (center), President Wilbur Wright Monument Committee—Sculptor Landowski (right). Official photograph in the Viet Collection in Paris.

First FLIGHT *from* NEW YORK *to* ALASKA—1920



PILOTS OF FIRST U. S. ARMY AIR-MAPPING TOUR OF ALASKA (Above)—They flew 4,345 miles and mapped from the air much inaccessible territory. (July-August-September, 1920). Left to right: Capt. St. Clair Street (in command), First Lieut. C. C. Nutt, Second Lieuts. R. C. Kirkpatrick, E. H. Nelson, C. E. Crumrine. Official Photograph, U. S. Army Air Corps.

LIEUTENANT JOHN A. MACREADY IN GREAT ALTITUDE FLIGHT (Below)—This daring flier sent his plane to its utmost "ceiling," 40,800 feet, to make a new world's record (true altitude above sea level, 37,800 feet) at McCook Field, Dayton, Ohio (September 28, 1921). Official Photographs, U. S. Army Air Corps.

First AIRPLANE *Flight* NEW YORK *to* BRAZIL—1922

LIEUTENANT WALTER HINTON, U. S. N., pilot of the N.C.-4 (see Page 277), was first to fly from New York to Rio Janeiro, Brazil (August 17, 1922—February 8, 1923)—5,880 miles in 100 hours, 21 minutes, flying time. Hinton is shown (right) with Dr. E. Pinto Martins of Brazil, one of his four companions.

Three years later (Winter and Spring, 1925) Lieut. Hinton was first to take an airplane into the tropical wilderness, with the exploring expedition of Dr. A. Hamilton Rice. With Capt. Albert W. Stevens, famous aerial photographer of the United States Army, he flew over 12,000 miles above inaccessible jungle and impassable water. Photograph International Collection.

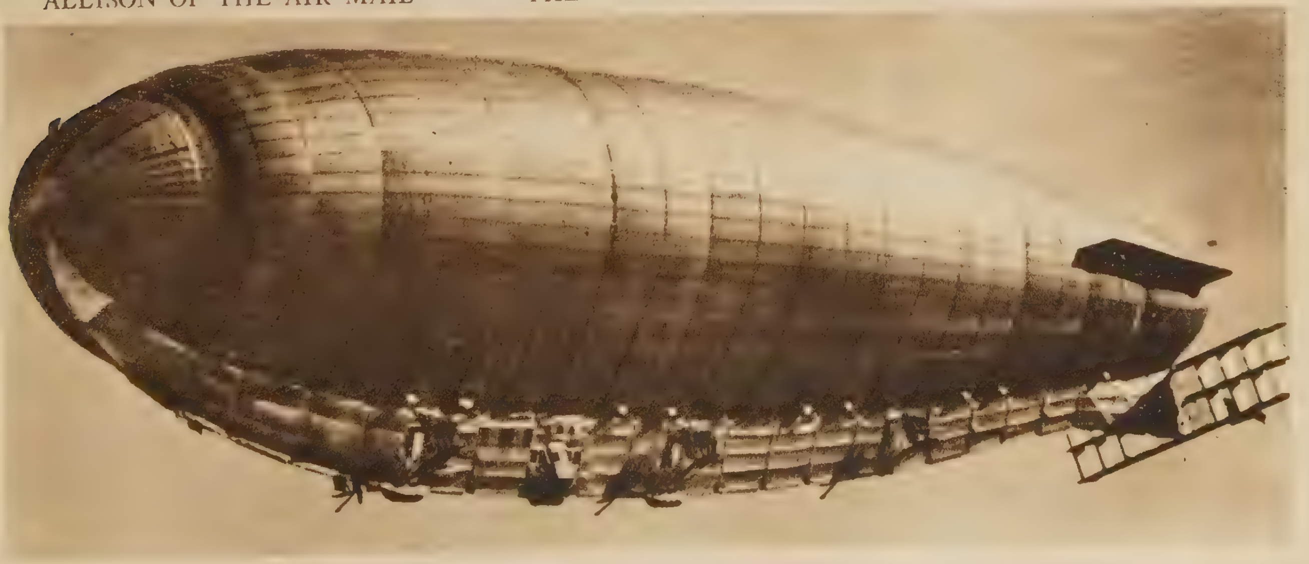
FIRST TRANSCONTINENTAL MAIL —The first mails through from San Francisco to New York in continuous flight (February 22-23, 1921) in a test preliminary to the present Transcontinental Air Mail, were flown in 33 hours, 20 minutes. Ernest M. Allison (below), Jack Knight, and other air mail pilots, flew the first mails. Official photo, U. S. Army Air Corps.

MARTINS OF BRAZIL WITH HINTON OF AMERICA (Above)

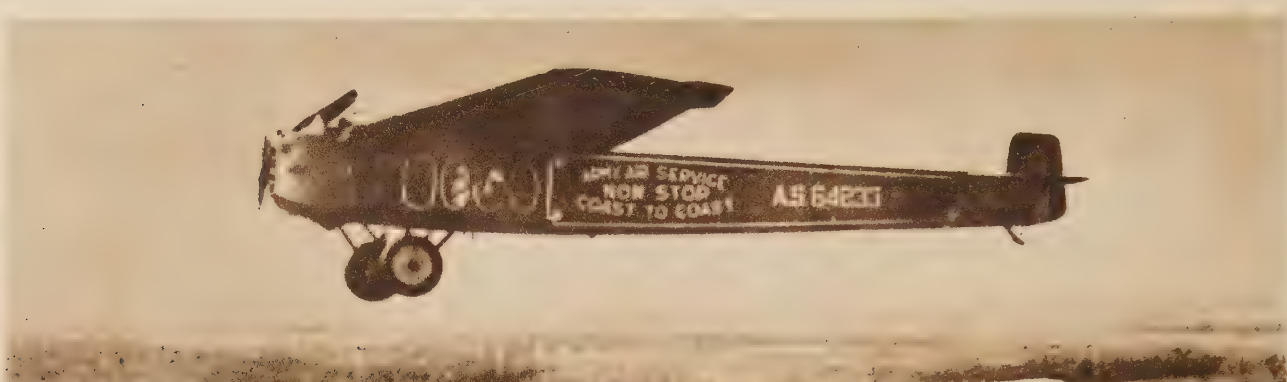
ALLISON OF THE AIR MAIL

AMERICA'S FIRST GREAT SEMI-RIGID DIRIGIBLE AIRSHIP, the "Roma" (below), was purchased from the Italian Government for the United States Army. She made her first official flight in this country and was christened at Langley Field, Virginia, (November 15, 1921) before a distinguished official and civilian assemblage from Washington and elsewhere. Colonel Nobile, later to gain fame as Arctic explorer in airships, had charge of her construction on behalf of the Italian War Ministry, which has long specialized in the semi-rigid type of dirigible. With 33 of her officers and crew, the "Roma" was destroyed by fire while cruising over Langley Field three months later (February 21, 1922). Official photograph from the U. S. Army Air Corps.

THE "ROMA" ON HER TRIAL FLIGHT IN AMERICA



First NON-STOP TRANSCONTINENTAL *Flight*—1923



THIS FIRST NON-STOP Transcontinental Airplane Flight across the United States was made from New York to San Diego, California, (May 2-3, 1924), flying 2,516.35 miles in 26 hours, 50 minutes.

Lieutenants John A. Macready and Oakley Kelly hold the historic honors. They lunched one day on the Atlantic coast and the next day by the shore of the Pacific, having flown over mountains, plain and desert without a stop. Twice before Macready (left), famed as the holder of the world's altitude record, had tried a transcontinental non-stop from west to east with Kelly (right) without getting through.

We see their plane over Ohio (above)—their arrival in San Diego (below). Photographs in Pacific and Atlantic Collection.

CROWDS AT SAN DIEGO GREET THE FAMOUS MACREADY AND THE SMILING KELLY
International Collection.

First FLIGHT *from* GULF *of* MEXICO *to* CANADA—1923

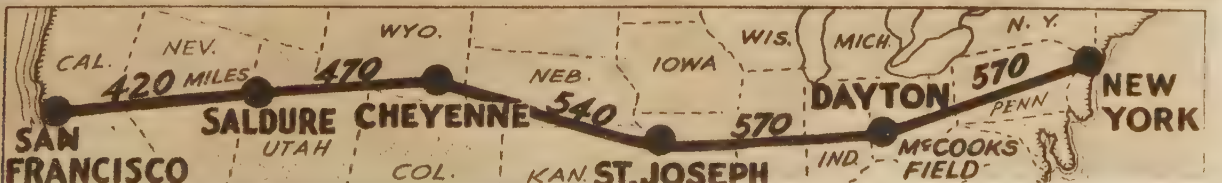
LIEUT. H. G. CROCKER, U.S.A. (Above), made the first airplane flight from the Gulf of Mexico to the Canadian border, Ellington Field, Texas, to Camp Borden, Canada—1,200 miles in 11 hours, 55 minutes (May 23, 1923). Official photograph U. S. Army Air Corps.

LIEUT. ALFORD J. WILLIAMS, U. S. N., (Right), American speed king of the air, made the unprecedented airplane speed of 266.59 miles per hour at Mitchell Field, Long Island (November 4, 1923), a world's record then and still the American record (1930). Official Photograph U. S. Navy.

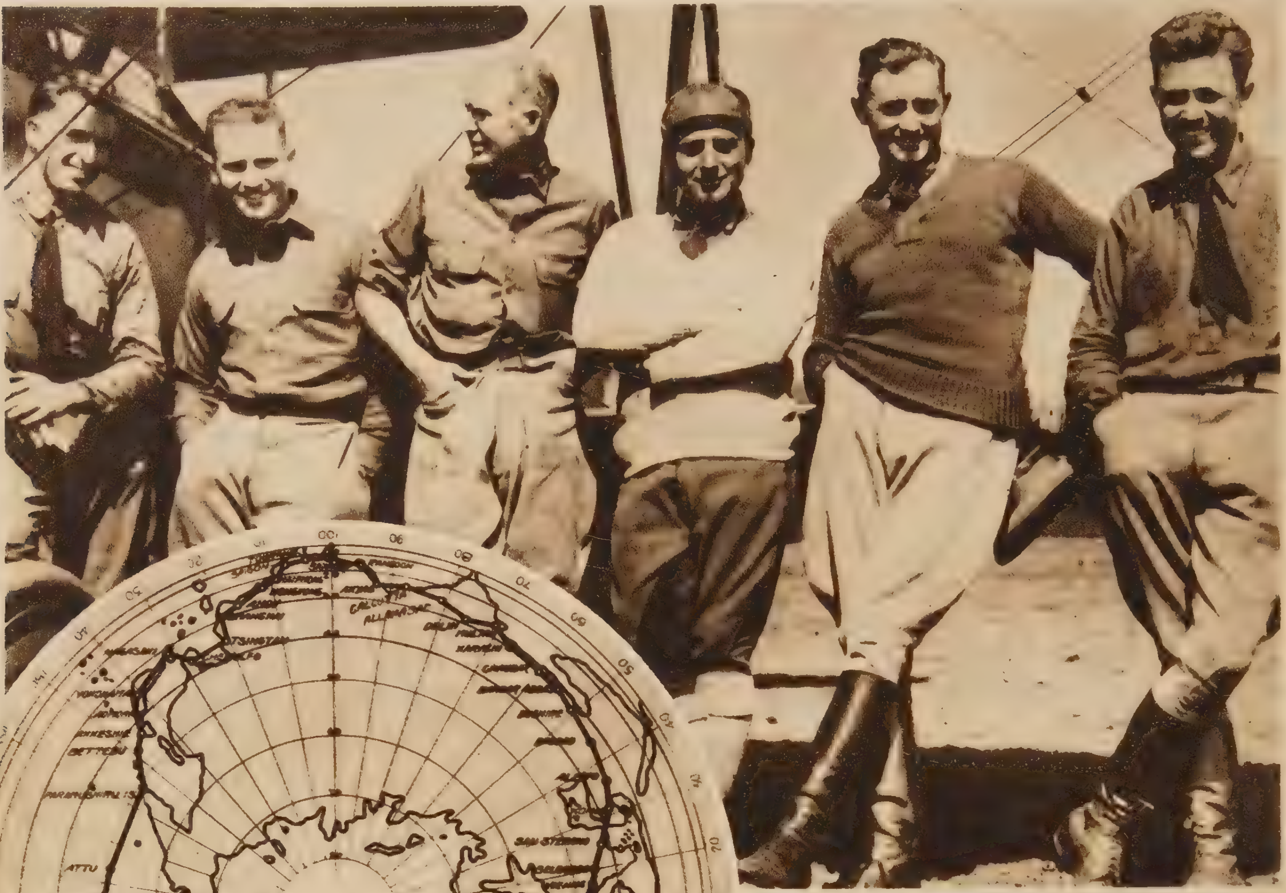
LIEUT. RUSSELL L. MAUGHAN, U.S.A. (Below), first flew straight across the continent, from New York to San Francisco, between Dawn and Dusk (June 23, 1924), 2,670 miles in 21 hours, 48 minutes.

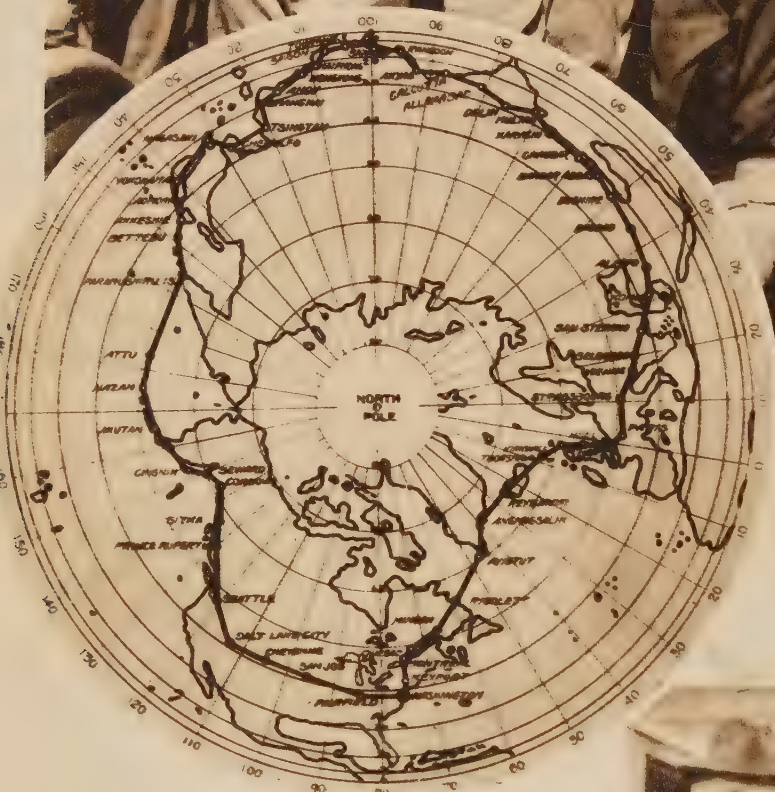
"AL" WILLIAMS
THE SPEED KING

DAWN-to-DUSK


CAL.
NEV.
WYO.
IOWA
WIS.
MICH.
N. Y.
420 MILES
470
NEB.
540
570
570
SAN FRANCISCO
SALDURE
UTAH
CHEYENNE
COL.
KAN.
ST. JOSEPH
IND.
DAYTON
McCOOKS FIELD
PENN
NEW YORK

First AIRPLANE FLIGHT AROUND *the* WORLD—1924



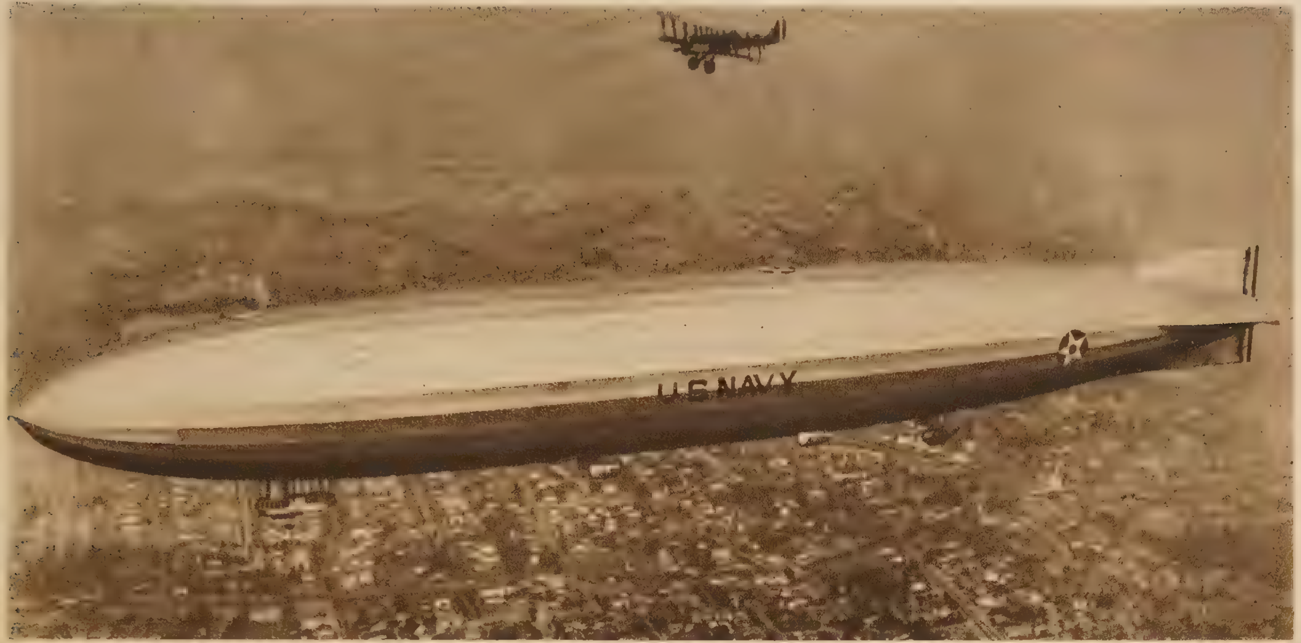

NORTH POLE
ATTU
SITKA
PRINCE RUPERT
SEATTLE
SALT LAKE CITY
CHEYENNE
WASHINGTON
CALCUTTA
ALLAHABAD
YOKOHAMA

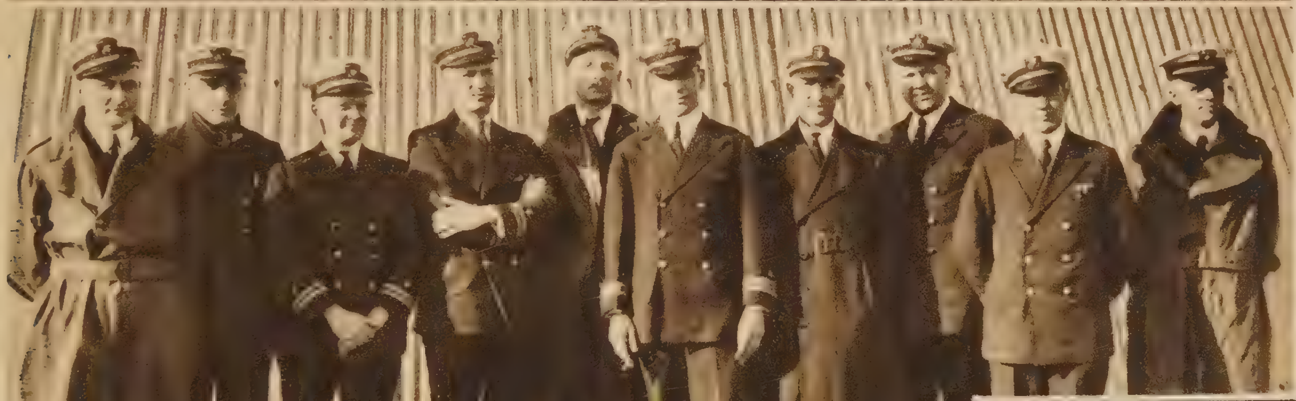
THE ROUND-THE-WORLD FLIERS—L. to R.—Lieut. Henry H. Ogden—Lieut. Leigh Wade—Lieut. Eric H. Nelson—Lieut. Leslie P. Arnold—Capt. Lowell H. Smith (Flight Commander), Lieut. John Harding, Jr. Smith, Wade and Nelson were the pilots. Photograph Acme Collection.

AMERICA GREETS HOMING FLIERS (Below)—President Coolidge—Secretary of War Weeks — Secretary of State Hughes. Official Photograph U. S. Army Air Corps.

CAPT. LOWELL H. SMITH, U.S.A., and five American Army lieutenants, were the first men to circumnavigate the world in airplanes (April 6-September 28, 1924). In three planes they flew from Seattle, Washington, to Alaska, over Behring Strait to Siberia and Japan, then China, Malaysia, India, Arabia, the Balkans, Vienna, Paris, London, the Orkneys, Iceland, Greenland, Labrador, Montreal, Washington and across the continent to the starting point. They covered a course of 27,553 miles in 15 days, 11 hours and 7 minutes of flying time. Photograph in Acme Collection.

First TRANSCONTINENTAL AIRSHIP VOYAGE—1924





AMERICA'S FIRST GREAT AIRSHIP—THE "SHENANDOAH" is here shown over the city of Los Angeles. It was known originally as the ZR-1, designed and built of American materials by the United States Navy at Lakehurst, New Jersey, on the Zeppelin model and launched (September 4, 1923).

The most notable air voyage of the "Shenandoah" (Daughter of the Stars) was the First Transcontinental Airship Voyage across America—from Lakehurst to San Diego, California (October 7-11, 1924), then up the Pacific coast to Portland, Oregon, and Camp Lewis, back to San Diego and return across the country to Lakehurst—to complete the first round trip cross-continent airship flight in history (October 25, 1924).

Lieut. Commander Zachary Lansdowne, her captain, is shown with her other officers (just above), sixth from the left. Rear Admiral William A. Moffett (right), Chief of the Navy Bureau of Aeronautics, was a passenger and observer on this flight.

The "Shenandoah" was lost in a great storm near Marietta, Ohio, (September 3, 1925), with Lt. Com. Lansdowne and fourteen others. Photographs in the Official Collection of the U. S. Navy and in the Herbert Collection.

First AIRSHIP VOYAGE GERMANY *to* AMERICA—1924

BERLIN TO WASHINGTON

THE "LOS ANGELES" (ZR-3)—Uncle Sam's "Great Rigid-Dirigible Airship"—still the pride of the United States Navy—was built at the Zeppelin works in Germany and delivered to the Government at Lakehurst, New Jersey, by air (October 15, 1924).

This epochal Transatlantic crossing is the First Airship Voyage from Germany to America, Dr. Hugo Eckener, president of the Zeppelin Company, in command.

The "Los Angeles" was built as a passenger and commercial ship, while the "Shenandoah" was typically a military airship. The former is 660 feet long, 20 feet shorter than the "Shenandoah," but with greater height and diameter, so that the "Los Angeles" has 2,400,000 cubic feet gas capacity, or 250,000 more than had the "Shenandoah."

The "Los Angeles" has made many air voyages over the American continent from her huge Lakehurst hangar; she has been seen in all parts of the land, and even in Bermuda, Porto Rico and the Canal Zone. Her silvery bulk is a strikingly beautiful spectacle in the air.

We see her (above) over Berlin just before leaving for America (Acme Collection) and (left) over the United States Capitol at Washington (International Collection).

First SEAPLANE FLIGHT *Over* PACIFIC OCEAN—1925

FIRST AERIAL EXPLORERS OF THE PACIFIC—Left to right: Bowlin, Stantz, Com. Rodgers, Lieut. Connell, Pope. Official Photograph, U. S. Navy.

COMMANDER JOHN RODGERS, U.S.N., first spanned the Pacific Ocean by air, from San Pablo, California, to a point near Honolulu, where he was compelled to come down on the surface of the sea when his gasoline supply gave out (August 31, 1925). With him were Lieut. Byron J. Connell, Chief Aviation Pilot S. R. Pope, Chief Radioman O. G. Stantz and Seaman Bowlin. They drifted about for a week, with little or no food or water, while warships, whose searchlights they could sometimes see and whose radio messages they could hear (but could not answer for lack of power) searched for them. They finally made the Island of Jaui under sail. They had flown 1,992 miles, a world's non-stop record, and sailed 450 miles on the surface of the ocean in their seaplane.

FRANCO AND DE ALDA

FIRST FLIGHT OVER SOUTH ATLANTIC was made by Captain Sacadura Cabral and Admiral Gage Coutinho from Portugal to Brazil (March 30-June 17, 1922). This was followed by Major Roman Franco and Captain Ruiz de Alda of Spain, who flew from Palos de Moguer, Spain, to Pernambuco, Rio de Janiero and Montevideo (January 22-February 10, 1926) Underwood Collection.

EUROPE—AFRICA—ASIA—Sir Alan J. Cobham, K.C.B.E., of England, made two notable flights which earned him knighthood—London to Cape Town and return (November 16, 1925-March 13, 1926)—London to Australia and return (starting June 30, 1926).

COBHAM FLYING OVER BRITISH PARLIAMENT

FIRST FLIGHT *Over the* NORTH POLE—BYRD—1926

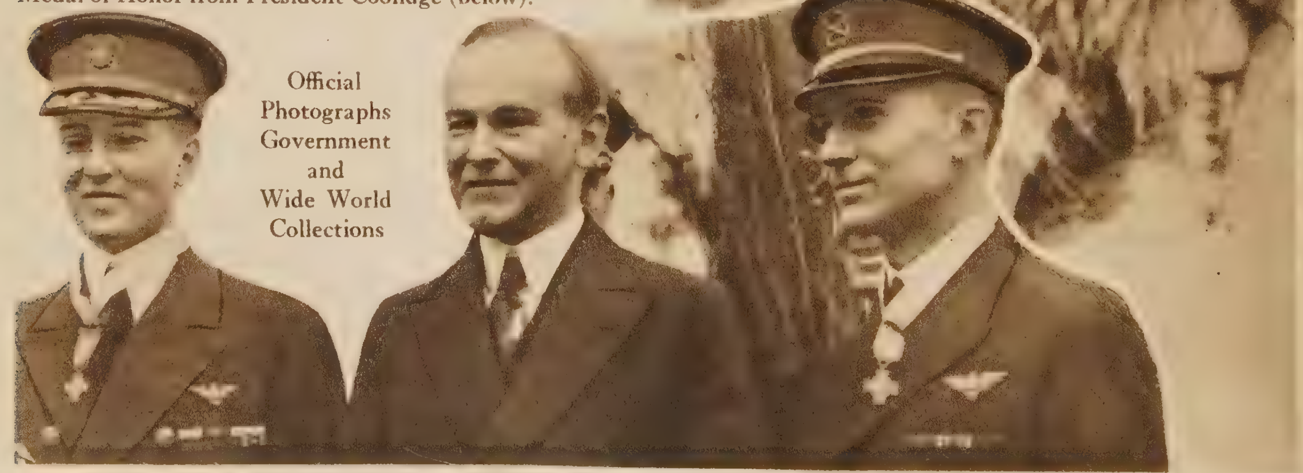
COMMANDER RICHARD EVELYN BYRD, U. S. Navy (now Rear Admiral Byrd) with his comrade, Pilot Floyd Bennett, hold the world honor of being the first to fly over the North Pole (May 9, 1926).

This epoch-making aerial exploration was made from Spitzbergen to the Top of the World and return—1,600 miles in 15 hours, 51 minutes.

The year before (1925) with the MacMillan Arctic Expedition these two had flown 6,000 miles over frozen wastes of Ellesmere Land within two weeks, Byrd's original Arctic flying.

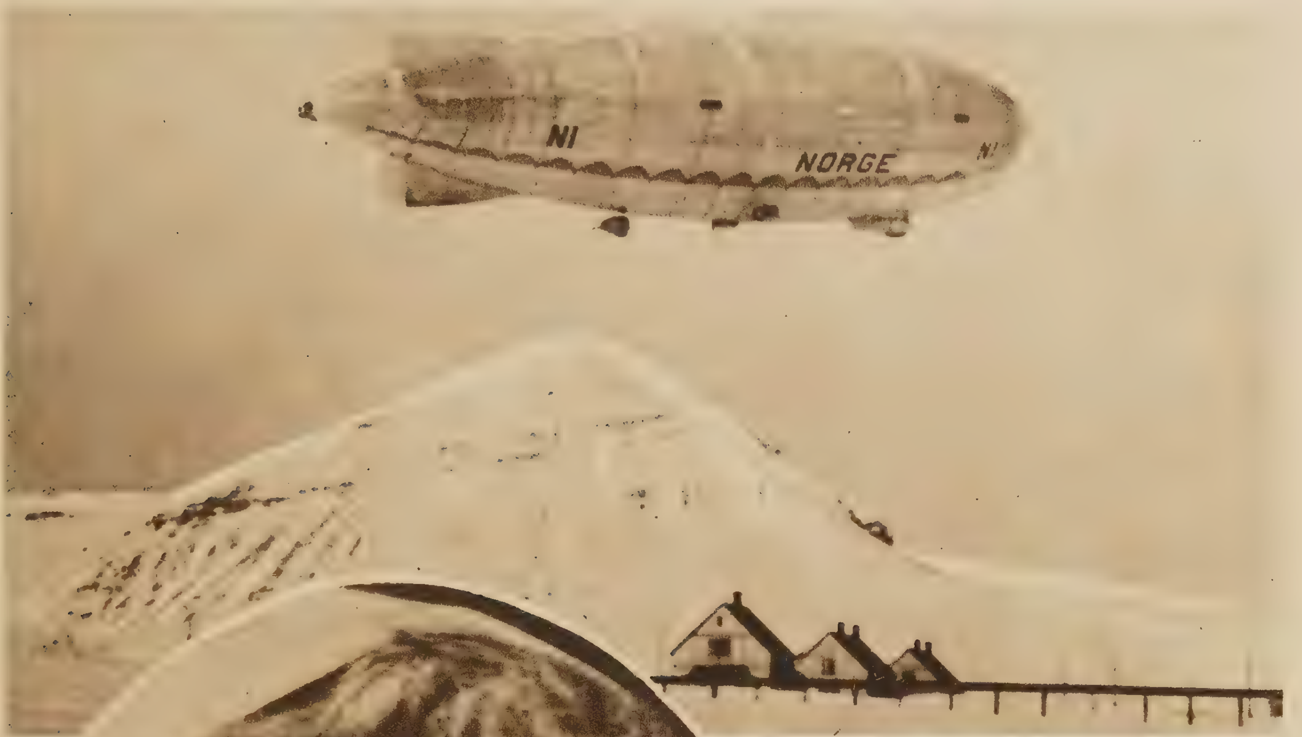
The North Pole flight was backed by a group of American financiers, including Edsel B. Ford, John D. Rockefeller, Jr., Vincent Astor, Dwight W. Morrow, Thomas F. Ryan, William Schiff, Richard F. Hoyt, P. W. Rouss, William A. Read, Lorillard Spencer, Robert W. Russell, William H. Todd and others.

We see Byrd (above) en route to the Pole over Arctic ice and snow and in Polar costume (right). Byrd and Bennett receive the Congressional Medal of Honor from President Coolidge (below).



Official
Photographs
Government
and
Wide World
Collections

FIRST AIRSHIP *Over* NORTH POLE—AMUNDSEN—1926



ROALD AMUNDSEN, famed Norwegian explorer and Discoverer of the South Pole, made First Airship Flight over Top of the World (May 12, 1906) with his comrades, Lincoln Ellsworth, well known American sportsman, and Col. Umberto Nobile, Italian airship designer.

In the dirigible "Norge," commanded by Nobile, the Amundsen expedition sailed from Spitzbergen—2,000 miles across the Arctic to Point Barrow, Alaska, and an additional 700 miles to Teller—where they brought the ship down safely (May 11-14, 1926). They crossed the Pole about 2.30 P.M. (May 12). The airship leaving Spitzbergen (above).

NOBILE
WITH DOG
(right)
ELLSWORTH
(center)
Wide World
Collection

THE
GREAT
AMUNDSEN
Noblest of
VIKINGS

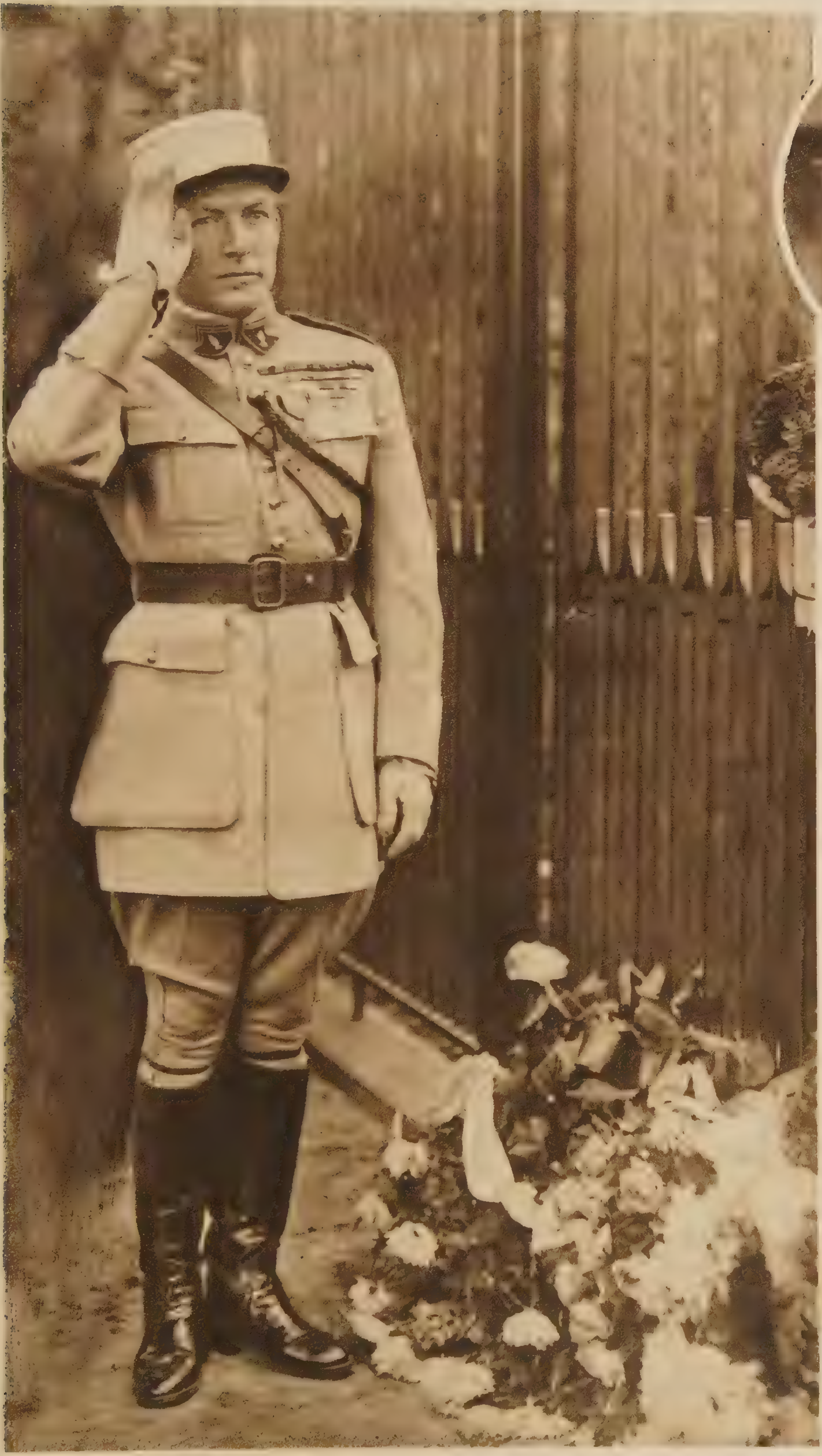
First PAN-AMERICAN *Flight Over Latin* NATIONS—1926

PAN-AMERICAN GOOD WILL FLIGHT through Mexico and Central America and around South America and back through the Caribbean islands—from Kelly Field, Texas, to finish at Washington—covered 25 foreign nations and colonies (December 21, 1926-May 2 1927). It found its farthest south at Valdiva, Chile. Ten U. S. Army officers flew five planes—Major Herbert A. Dargue (in command)—Capts. Ira. C. Eaker—Arthur R. McDaniel—Clinton F. Woolsey—First Lieuts. E. A. Whitehead—Charles McK. Robinson—M. S. Fairchild—B. S. Thompson—L. D. Weddington and John W. Benton. Woolsey and Benton were killed in an aerial collision near Buenos Aires. Pan-American fliers (above) in Wide World Collection (Major Dargue in flying helmet); Dargue portrait (right)—Official photo. U. S. Army Air Corps.

"IL DUCE" MUSSOLINI (left) greets Colonel the Marchesi De Pinedo in Rome (June 16, 1927) upon returning from a four-continent flight of 25,200 miles which began four months before (February 8, 1927).

De Pinedo flew over Africa, the South Atlantic, a circuit of South America, back through the West Indies to New Orleans, as far west as Arizona, returned to New York and flew via Newfoundland and the Azores to London and then to Rome. Photograph in International Collection.

First FLIERS LOST *Crossing* ATLANTIC OCEAN—1927



NUNGESSER AND COLI—Intrepid French birdmen—First to Attempt Westward Crossing of Atlantic by Air—only to meet death somewhere between Europe and America!

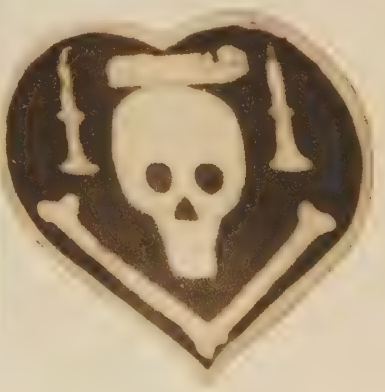
Capt. Charles Nungesser and Capt. Francois Coli, of France, took off from Le Bourget Field amid mists of early morning (May 8, 1927) to fly to New York.

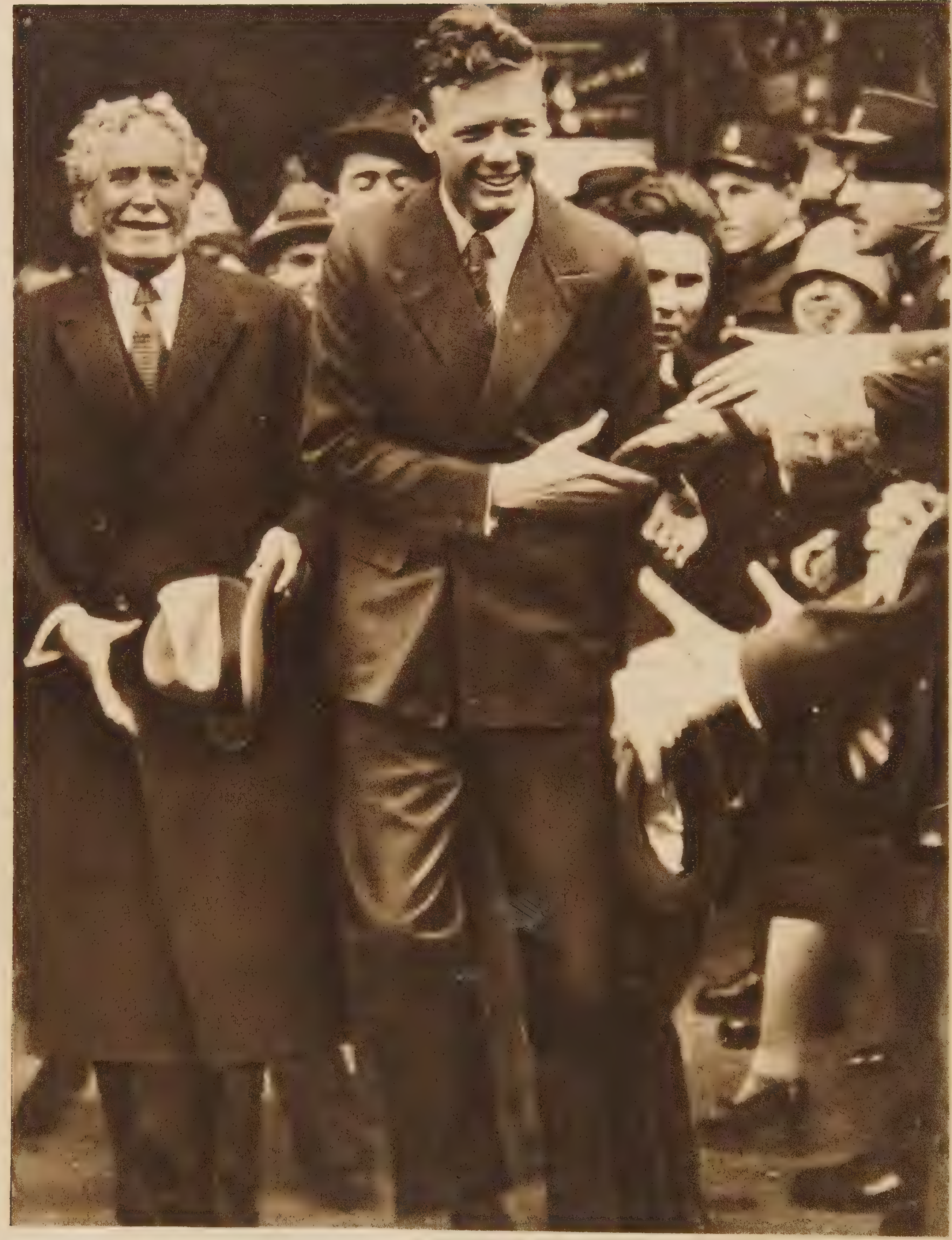
Dropping their landing gear and heading out to sea at the Seine's mouth, they were sighted some distance out over the ocean.

The rest is *silence.* No trace of the "White Bird," with skull-and-crossbones insignia used by the famous ace in the World War, was ever found.

While America anxiously awaited their advent, Nungesser's aged mother prayed and all Paris grew exultant over baseless reports that they had landed.

We present (above) Capt. Coli's portrait (Herbert Collection) Capt. Nungesser at the tomb of Theodore Roosevelt at Oyster Bay (left)—Nungesser's death's head insignia—Wide World and Acme Collections.





THRONGS IN PARIS HAIL "LONE EAGLE" AS THE "GREATEST ARGONAUT OF THE AGES"
Lindbergh in His Lone Flight Across the Atlantic (May 20-21, 1927) Arouses the World.

PART XVIII

AROUND *the* WORLD *with* FAMOUS FLIERS

HISTORIC EVENTS *in the* AIR *on the* FIVE CONTINENTS

EPICS OF VALOR are being written in the skies — the new Iliad and the Odyssey of this modern world. Not since the classics of the ancient Greeks and the sagas of the Vikings, has the world witnessed a race of men as valorous as the present day "Knights of the Blue".

It is a new race of immortals whose deeds will be related down through the ages to come. Among these classic figures we meet first the "Lone Eagle of the Clouds" — the great Lindbergh on the First Non-Stop Flight from America to France (May 20–21, 1927) in "The Spirit of St. Louis"—New York to Paris—3,610 miles.

First Flight from America to Germany (June 4–5, 1927) when Chamberlin in the "Columbia" crosses from New York to Eisleben—3,911 miles—with Levine as First Transatlantic Airplane Passenger. Byrd flies from New York to France (June 28–30, 1927) in the "America" — 3,477 miles with Acosta, Balchen and Noville. First Non-Stop Flight Across the Pacific from California to Honolulu—2,407 miles in 25 hours, 50 minutes—by Maitland and Hegenberger (July 14–15, 1927; Smith and Bronte fly the Pacific from California to Molokai Island (July 14–15, 1927); Lindbergh makes his Tour of the United States, 48 States, 82 Cities, 22,350 miles (July 20–October 23, 1927); Air Race Across the Pacific from California to Honolulu is won by Goebel and Davis (August 16–17, 1927) with Schluter and Jensen coming in second. Tragedies follow the Dole Race as Frost, Scott, Pedlar, Knope and Mildred Doran are lost in the Pacific, while the rescue party of Erwin and Eichwaldt never return, and Covell, Waggoner and Rogers are killed in preliminary crashes. Redfern is lost in flight from Georgia to Rio de Janeiro (April 25, 1927).

America to Japan, via Atlantic Ocean, Europe and Asia—12,295 miles in 18 days, 145½ flying hours—is the achievement of Brock and Schlee (August 27–September 14, 1927). Attempting the westward flight across the Atlantic from Great Britain to America, Princess Lowenstein-Wirtheim is lost at sea with Minchin and Hamilton (August 31, 1927); Bertaud, Hill and Payne are lost in attempt to fly from Maine to Rome (September 6, 1927); Tully and Medcalf are lost in an attempted flight from Newfoundland to London (September 7, 1927); Ruth Elder and Haldeman are rescued off the Azores (October 11–13, 1927).

Distance is under complete conquest: Flights are made from London to Australia—13,000 miles by Mrs. Keith Miller and Captain Lancaster (October 14, 1927–March 19, 1928); Costes and LeBrix fly from France to Africa, South America, North America, Asia, and back to Europe—36,000 miles—using steamship only to cross the Pacific (October 10, 1927–April 14, 1928). Sir Alan and Lady Cobham fly from England to South Africa and return—22,000 miles (November 17, 1927–May 31, 1928); Lindbergh makes "Good-Will Tour" through Latin America—9,060 miles (December 13, 1927–February 13, 1928); Frances Grayson, with Goldsborough, Koehler, and Omdal are lost in attempted flight from Newfoundland to Denmark (December 23, 1927); Hinkler makes Solo Flight from London to Australia—12,000 miles in 134 hours (February 7–22, 1928); Lady Heath flies from Capetown to England—10,000 miles (February 12–May 17, 1928); Lady Bailey from England to Capetown and return—18,000 miles (March 9, 1928–January 16, 1929); Elsie Mackay and Captain Hinchcliffe are lost in attempted westward flight from England to America (March 13, 1929); Paris to Timbuctoo and return—6,500 miles—by Gerardot and Cornillon (April 3–6, 1928).

First Westward Airplane Flight Across Atlantic Ocean (April 12–13, 1928) is made in the "Bremen" by Baron von Huenefeld, Koehl, and Fitzmaurice—2,125 miles in 36½ hours; First Airplane Flight from Alaska to Spitzbergen by Sir Hubert Wilkins and Eielson (April 21, 1928) across the Arctic Sea — 2,300 miles, 20½ hours; D'Oisy flies from Paris to India (May 8–16, 1928); Dirigible Airship "Italia" under command of General Nobile is wrecked on return flight from North Pole (May 23, 1928); First Flight from California to Australia and New Zealand—over 8,000 miles—is made by Kingsford-Smith, Ulm, Lyon, and Warner (May 31–June 10, 1928); Carranza flies from Mexico City to Washington, with one stop in North Carolina, (June 11—12, 1928) and is killed in a storm over New Jersey (July 13, 1928).

First Woman to Fly Across the Atlantic is Amelia Earhart (July 17–18, 1928) in the airplane "Friendship" with Stultz and Gordon—Newfoundland to Wales, 2,100 miles in 20 hours, 40 minutes. First Non-Stop Flight from Rome to Brazil—4,475 miles—by Ferrarin and del Prete (July 3–5, 1928); Courtney attempts non-stop flight from London to New York (August 2, 1928) and is rescued at sea with Pierce, Gilmour and Hosmer in response to radio signals; Idzikowiski and Kubala are rescued at sea in attempted flight from Paris to New York (August 3, 1928); Hassell and Cramer on attempted flight from Illinois to Sweden (August 16, 1928) are rescued in Greenland.

FIRST FLIGHT *from* AMERICA *to* FRANCE—1927

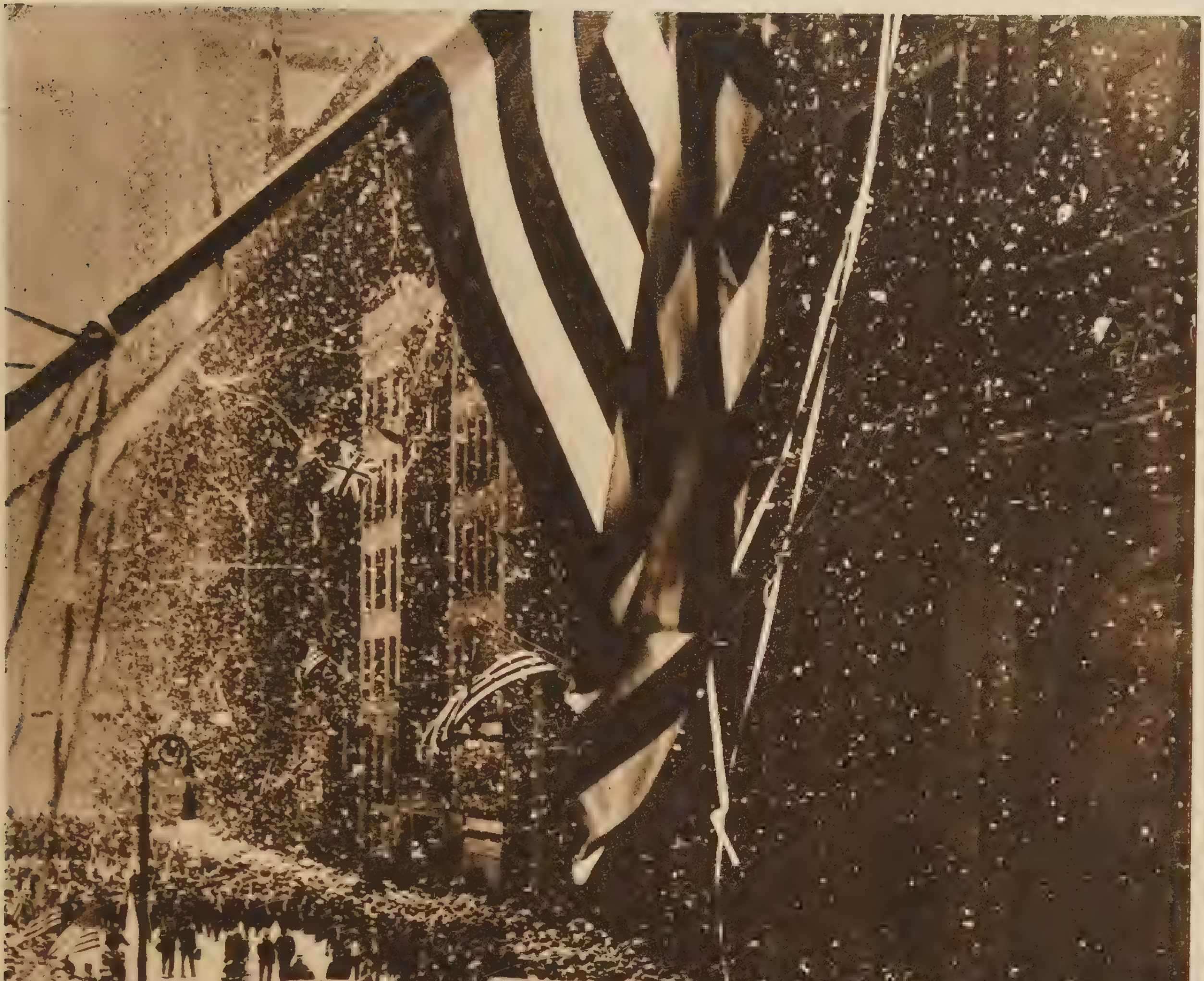
LINDBERGH—President DOUMERGUE of France—Ambassador HERRICK and BLERIOT'S SALUTE

AND THEN CAME LINDBERGH—"AIRMAN ALONE"—"VIKING OF THE CLOUDS"—to sweep the world by a flying miracle! Charles A. Lindbergh, former United States Mail flyer, flew straight across the challenging Atlantic from New York to Paris—alone in the "Spirit of St. Louis," with five sandwiches and two canteens of water—3,600 miles in 33 hours and 31 minutes (May 20-21, 1927).

From San Diego, where his plane was built, Lindbergh crossed the continent to New York in two hops. On a misty May morning at 7.52, he took off from Roosevelt Field in the presence of a few friends. Lloyd's of London quoted ten to three he would never be heard from again. The evening of the next day, at 10.31, he dropped down on Le Bourget Field, where a hundred thousand Parisians, mad with joy, sent up wild cheers "heard 'round the world."

European Governments and peoples paid him every honor in their power; Uncle Sam sent a warship to bring him home as a conqueror; and in his native land Lindbergh was greeted with spontaneous ovations such as no living man has ever faced. We see (below) President Coolidge pinning the Distinguished Flying Cross on his breast in the presence of statesmen and diplomats: Secretaries Davis, Work and Wilbur of his cabinet—Attorney General Sargent—John Hays Hammond, Chairman of the Washington Citizens' Committee and many other notables. We see (circle below) Chevalier Raymond Orteig, donor of the Orteig $25,000 Prize awarded to Lindbergh for his achievement, during official ceremonies in New York.

PRESIDENT COOLIDGE AWARDS FLYING CROSS—CHEVALIER ORTEIG AWARDS $25,000 PRIZE (circle)



BENEATH THE STARS AND STRIPES NEW YORK HAILS THE WORLD'S AIR HEROES

The Lindbergh parade proceeding through a storm of confetti, streamers, and tumultuous ovation—a procession of triumph—is typical of the Mardi Gras spirit with which the American metropolis has welcomed all airmen of thrilling achievements—not only its own but from all nations.

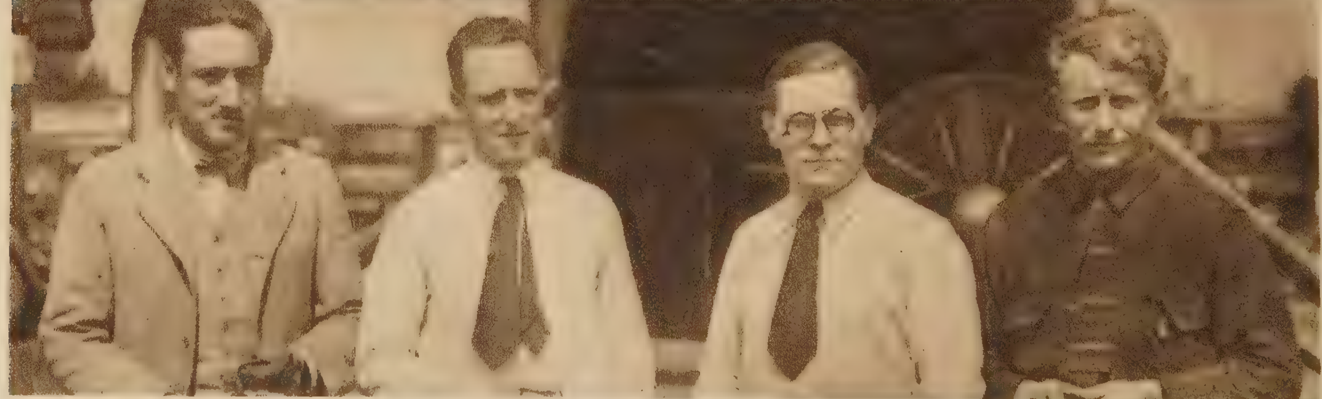
FIRST FLIGHT *from* AMERICA *to* GERMANY—1927

CHAMBERLIN CARRIED IN TRIUMPH ON SHOULDERS OF GERMANS IN NATIONAL TRIBUTE

CLARENCE CHAMBERLIN, one of the World's Greatest Aviators, made the First Non-stop Transatlantic Flight from New York to Germany (June 4-6, 1927)—landing at Eisleben and flying next day to Berlin; Chamberlin flew 3,902 miles in 42 hours, 45 minutes; with Charles Levine as the first Transatlantic passenger. We see Chamberlin (above) on the shoulders of excited Germans on arrival in Berlin, and from left to right, Levine—the German Chancellor, Herr Marx—Chamberlin—and Herr Streseman, the German Foreign Minister. Pacific and Atlantic Col.

COMMANDER RICHARD E. BYRD, first to fly over the North Pole, now makes his historic flight over the Atlantic Ocean (June 29-July 1, 1927) soon to be followed by his great flight over the South Pole. We see him (below) with his Atlantic crew: Bert Acosta—Bernt Balchen—and Flight Engineer George W. Noville. They flew from Roosevelt Field, Long Island, to France, reaching Paris but unable to come down in the storm and fog and returning to the seashore, finally alighting in the breakers at Ver-sur-Mer, near Trouville. Byrd flew an estimated 4,200 miles in 42 hours. 6 minutes. Wide World Collection.

BYRD AND HIS COMRADES MAKE HEROIC FLIGHT ACROSS ATLANTIC-AMERICA TO FRANCE



First FLIGHT—SAN FRANCISCO *to* HONOLULU—1927

LIEUTS. LESTER J. MAITLAND AND ALBERT F. HEGENBERGER, U. S. A., are first to make an uninterrupted non-stop flight across the Pacific from Oakland, California, to Honolulu (June 28-29, 1927). With the aid of the radio beacon and the sextant, these daring fliers held their aerial craft on a straight course to hit a dot on the surface of the broad eastern ocean—flying 2,400 miles of open sea in 25 hours, 50 minutes. A splendid feat of air navigation!

Hawaii joyously welcomed these airmen of high courage and skill. Their return to San Francisco was the signal for unbounded enthusiasm such as had never been known there.

HEGENBERGER
and
MAITLAND

Here we see Hegenberger and Maitland entering the Golden Gate, on their return from Hawaii. P. and A. Collection.

PRESIDENT COOLIDGE honors Pacific Fliers with Distinguished Flying Cross — Hegenberger (left), Maitland (right) — Secretary of War Davis behind the President. Wide World Collection.

First AIR RACE *from* CALIFORNIA *to* HAWAII—1927

THREE AMERICAN FLYING TEAMS successfully crossed the stretch of Pacific Ocean between California and Hawaii after Maitland and Hegenberger first crossed the Pacific: Ernest L. Smith and Emory B. Bronte—Colonel Arthur Goebel and Lieut. William V. Davis, U. S. N.—Martin Jensen and Paul Schluter.

SMITH AND BRONTE (right) were the first civilian flyers to make this flight (July 14-15, 1927), covering the 2,340 miles between Oakland, California and the Island of Molokai in 25 hours, 36 minutes. "Fog under us all the way," said Smith. "We never saw the ocean until our destination." With just enough gas to reach land, they were forced to land their plane in brush and wreck it, though themselves unhurt.

We present the two daring fliers decorated with the garlands (lei) which Hawaii places about the necks of those it wishes to honor—Bronte (left) and Smith (right). International Collection.

WINNERS
of the
DOLE
RACE

SCHLUTER AND JENSEN (below) won second place in the Dole Race, flying the distance in 28 hours, 16 minutes.

Among the many fatalities in this race, three fliers were lost in two crashes in the preliminary flights.

COL. GOEBEL AND LIEUT. DAVIS (above) were winners of the Dole Airplane Race, Oakland to Honolulu (August 16-17, 1927), making the distance, 2,400 miles, in 25 hours, 17 minutes.

Eight planes crossed the starting line in this race, four soon turned back. Two planes were lost with John W. Frost and Gordon Scott, and with Mildred Doran, John A. Pedlar and Lieut. V. R. Knope. Capt. William P. Erwin and A. H. Eichwaldt were later lost searching for the missing. Pacific and Atlantic Collection.

First Flight AMERICA—EUROPE—ASIA—JAPAN—1927

GREAT
OVATION
to
AMERICANS
in
JAPAN

TOKIO
DECORATES
BROCK
and
SCHLEE

AROUND-THE-WORLD FLIGHT, which reached as far as Japan, was that of Edward S. Schlee, a Detroit business man, and William Brock, well known pilot. They left Harbor Grace, Newfoundland (August 28, 1927), flew the Atlantic and then across Europe and Asia with several stops, reaching Tokio, Japan (September 14, 1927), a distance of 12,295 miles in 18 days, including all delays.

This magnificent flight stopped in Japan at request of officials at home who feared the difficulties of a trans-Pacific flight to girdle the globe. Brock (left) and Schlee (above). Wide World Collection.

FIRST WOMAN ATTEMPTS TO FLY ATLANTIC—RUTH ELDER (right)—With Capt. Haldeman she made the longest flight over water (October 11-13, 1927)—from Roosevelt Field, New York, to a landing on the surface of the sea 360 miles northeast of the Azores, after a 28-hour battle with fog and winds. Their actual distance was 2,623 miles.

The fliers were picked up uninjured by a Dutch oil tanker. In attempting to hoist their plane to the deck it caught fire and was destroyed. Photograph (right) of Miss Elder and Capt. Haldeman in Acme Collection.

First FRENCH FLIERS AROUND *the* WORLD—1927

CAPT. DIEUDONNE COSTE AND COM. JOSEPH LEBRIX (above) were the first French fliers to go around the world (October 14, 1927-April 14, 1928). Starting from Paris, these intrepid airmen flew over Africa, made the first non-stop flight across the South Atlantic to South America, flew to and across the United States, covered the Pacific by steamer and flew from Tokio to Paris—35,000 miles in 338 flying hours. Photograph (above) during their Washington reception: Lebrix—French Ambassador Paul Claudel—Coste—Secretary of War Davis. Pacific & Atlantic Collection.

SIR ALAN AND LADY COBHAM OF ENGLAND (right)—Landing at the Battery for their New York reception. They made an epochal flight of 20,000 miles around the continent of Africa (November 17, 1927-May 31, 1928), beginning and ending at Plymouth, England. Wide World Collection.

MAJOR GENERAL JAMES E. FECHET (below) is shown taking the oath as Chief of the United States Army Air Corps (December 13, 1927), upon the retirement of Major General Mason M. Patrick. Lt. Col. Joseph I. McMullen, a boyhood friend, administers the oath. General Patrick (below, right).

GOOD-WILL TOUR *Through* LATIN AMERICA—1927

COLONEL CHARLES A. LINDBERGH (above) on his Good Will Flight to Mexico and Latin America (December 13, 1927). He flew non-stop from Washington to Mexico City, 2,100 miles in 27 hours. This aerial mission covered Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, the Virgin Islands, Porto Rico, Santo Domingo, Haiti and Cuba and ended at St. Louis, Missouri (February 13, 1928).

Col. Lindbergh reached Havana (February 8) while the Sixth Pan-American Conference was in session and spoke to its delegates. He visited 17 cities and flew 9,060 miles—in the gallant "Spirit of St. Louis," which had carried him from New York to Paris. We see him here on his arrival at Mexico City as greeted by Gen. Jose Alvarez. Ambassador Morrow stands between. The lower photograph (above) was made during his Havana reception. U. S. Ambassador Judah is on extreme left with President Machado. Photographs in International Collection.

BERT HINKLER, NOTED ENGLISH FLIER (right), made the first solo flight from England to Australia, flying from London to Port Darwin—12,000 miles in 15½ days. He left London (February 7, 1928) and arrived at Port Darwin on the north coast of Australia (February 22). Photograph by Acme.

First WESTWARD *Flight Across* ATLANTIC—1928

VON HUENEFELD FITZMAURICE KOEHL

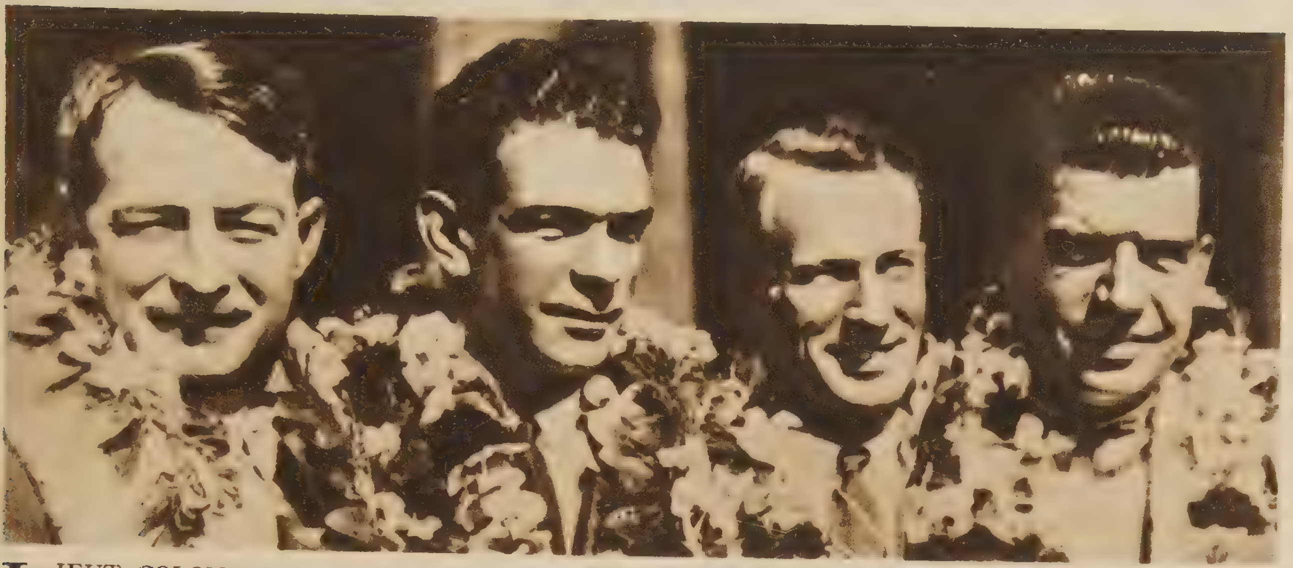
BARON GUENTHER von HUENEFELD—CAPT. HERMAN KOEHL—MAJOR JAMES FITZMAURICE. The two Germans and the Commandant of the Irish Free State Air Force, were greeted with tumultuous enthusiasm in New York after making the first westward aerial crossing of the Atlantic—from Baldonnel, Ireland, to Greeneley Island, Newfoundland—2,070 miles in 37 hours (April 12-13, 1928). New York was their original objective, but the storms and trackless fog forced them down for lack of fuel.

Thus the ninth attempt to make this westward crossing succeeded—a series which began with Nungesser and Coli. Seven lives were lost in the eight attempts which failed. Floyd Bennett, who flew to the North Pole with Admiral Byrd, left a sick bed to pilot a relief plane to Greeneley Island, was stricken with pneumonia en route and died.

FIRST AIRPLANE FLIGHT OVER TOP OF WORLD

CAPTAIN GEORGE H. WILKINS of Australia—now Sir Hubert Wilkins, noted polar explorer—and Lieut. Carl B. Eielson, who flew the first mail plane in Alaska, made a 2,200-mile flight over Arctic wastes, from Point Barrow, Alaska, to Spitzbergen, (April 15-21, 1928). This exploration revealed far more than had been known about the territory within the Arctic Circle, but found no land. Portraits of Wilkins (right) and Eielson (left) in Acme Collection. Photograph of their plane and camp in International Collection.

FIRST FLIGHT *from* AMERICA *to* AUSTRALIA—1928



LIEUT.-COLONEL CHARLES E. KINGSFORD-SMITH and Lieut. Charles T. P. Ulm, Australian fliers, with Lieut.-Com. Harry W. Lyon, navigator, and James Warner, radio operator, first flew the Pacific from America to Australia (May 31-June 10, 1928)—from Oakland, California, to Brisbane, Australia—7,400 miles in 83 hours, 15 minutes flying time—with stops at Honolulu and Fiji Islands. They are, left to right (above), Warner, Ulm, Kingsford-Smith, Lyon. Acme Collection.

AIR EPIC OF THE ARCTIC—Rescue of General Umberto Nobile's party from the ice near Spitzbergen after the loss of their great semi-rigid dirigible airship "Italia" in which they were returning from a North Pole flight (May 23-24, 1928). Covered with ice and unmanageable, she had crashed. Six men were lost when the huge bag bounded back into the air and disappeared, one was killed when she fell and Nobile was badly injured. Two weeks later the world learned by radio what had occurred. Seven nations and 24 planes took part in the rescue. The great polar explorer, Amundsen and a party of five were lost in one rescue plane. Dr. Finn Malmgren, Swedish scientist of the Nobile party, was lost trying to make his way out over the ice, with two others who were rescued. "Italia" (below) near Spitzbergen. Underwood Collection.

FIRST WOMAN *to* FLY *Across* ATLANTIC OCEAN—1928

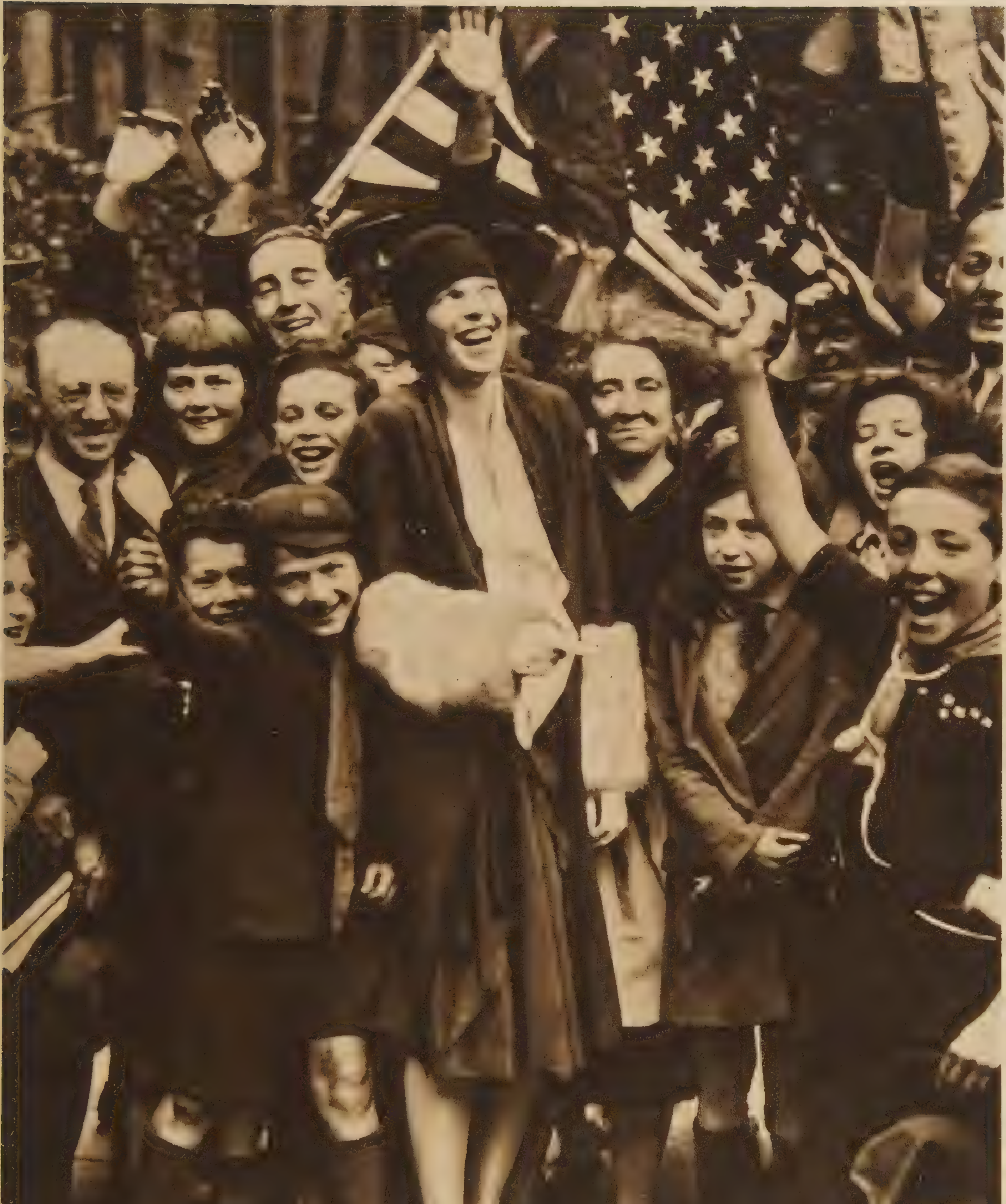
MISS AMELIA EARHART, American aviatrix, holds the honored position in history as the first woman to fly the Atlantic. Piloted by Wilmer Stultz, noted flier, and accompanied by Louis Gordon, mechanic, they flew from Trepassy Bay, Newfoundland, to Burry Port, Wales, in the monoplane "Friendship" (June 17-18, 1928)—something over 2,000 miles in 20 hours, 40 minutes.

Except for the first hour out, they never saw the sea, flying through rain, fog and snow. Stultz even ascended to 12,000 feet without getting out of the bad weather—a remarkable achievement in blind flying by a great pilot.

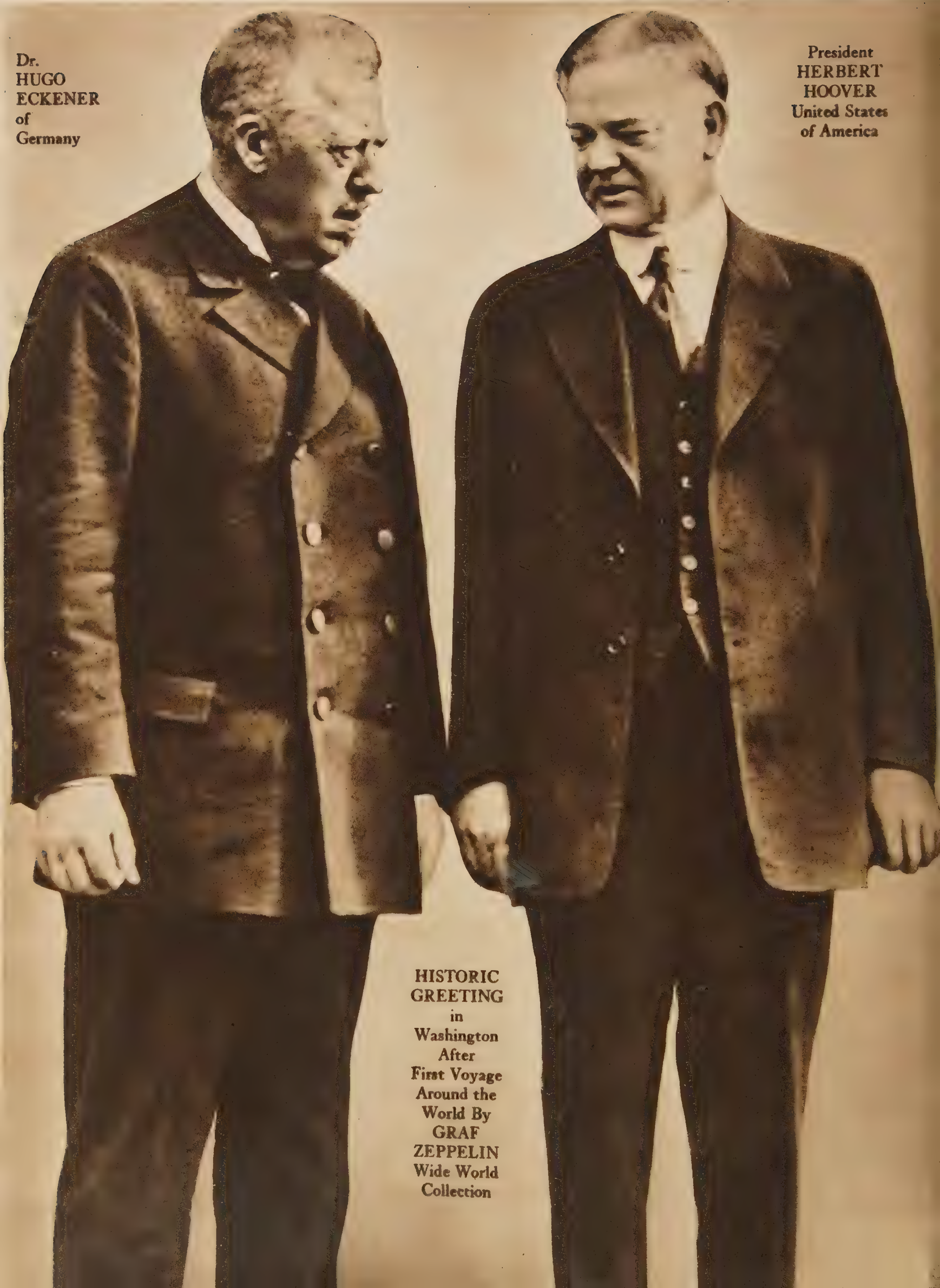
The brilliant and daring Amelia Earhart who made this epic air journey, is shown in flying rig (above), with Stultz (right) and Gordon (left). International Collection.

CAPT. ARTURO FERRARIN AND MAJOR C. P. DEL PRETE (left), Italian airmen, who broke the world's record for non-stop distance flight (July 3-5, 1928) by flying from Rome to Brazil—4,466 miles in 51 hours, 59 minutes.

We present the fliers (lower left—Del Prete; above, left—Ferrarin) with their smiles on their return to Rome. Pacific and Atlantic Collection.



LONDON GIVES HISTORIC OVATION TO AMERICAN GIRL—AMELIA EARHART—First Woman to Fly Across the Atlantic Ocean unites the Hemispheres on her mission of "Good Will" and is hailed as the "Girl Lindbergh."



Dr.
HUGO
ECKENER
of
Germany

President
HERBERT
HOOVER
United States
of America

HISTORIC
GREETING
in
Washington
After
First Voyage
Around the
World By
GRAF
ZEPPELIN
Wide World
Collection

PART XIX

The WORLD *in the* AIR—TODAY *and* TOMORROW

GREAT ACHIEVEMENTS *That Are* RE-MAKING *the* WORLD

THE GREATEST DRAMA in human history is now being enacted. Scientists agree that we are entering the era of "America to Europe over night—around the world in twenty-four hours — and eventually 1,000 miles an hour—all wthin the range of probability."

So many are the records being made today in all parts of the world that we must confine ourselves to events of greatest historical import for generations to come. We witness the First Voyage of the Graf Zeppelin from Germany to America—6,000 miles in 111½ hours with 40 in the crew and 20 passengers, under Commander Eckener (October 11–15, 1928) and its return voyage of 4,400 miles in 68 hours, 46 minutes, later to make the First Airship Voyage Around the World. Here are the epic scenes in the modern world drama.

The First Flight over the Antarctic Continent is made by Wilkins and Eielson (December 27, 1928); Byrd makes his first flight over Little America (January 2, 1929); Lady Bailey completes her 18,000 mile journey over Africa (January 16, 1929); First Trans-United States Flight between Canada and Cuba is accomplished by Haldeman—1,404 miles in 13 hours (February 23, 1929); South Atlantic Flight from Spain to Brazil—4,100 miles in 43 hours, 48 minutes by Jimenez and Iglesias (March 24–26, 1929); London to Karachi—4,130 miles in 50 hours, 48 minutes, by British Royal Air Force (April 25–26, 1929); Flight from Maine to Paris, with stop in Spain—3,128 miles in 29 hours, 52 minutes, by Assolant, Lefevre and Lotti (June 13–14, 1929); British warship rescues four Spanish aviators, Franco, de Alda, Gallarza, Madariaga, off Azores (June 29, 1929), while starting on flight around the world.

"Southern Cross" flies from Australia to London—12,000 miles in 12 days, 21 hours, 18 minutes—with Kingsford-Smith, Ulm, Litchfield and McWilliams (June 25–July 10, 1929); First Flight from America to Rome, with stop in Spain, by Williams and Yancey (July 8–10, 1929); Paris to New York Flight of Kubala and Idzikowski is wrecked at Azores (July 14, 1929); Chicago to Berlin Flight, via Greenland and Iceland, wrecked in ice floes in Hudson Straits (July 14, 1929); London to India and return—over 10,000 miles, accomplished by the Duchess of Bedford, with Barnard and Little (August 2–9, 1929); Moscow to New York, across North Pacific, via Seattle—13,300 miles in 142 flying hours by Russian Soviet fliers, Shestakoff, Fufayef, Sterligof, Bolotof (August 23–November 1, 1929).

The First Airship Voyage Around the World is made by the Graf Zeppelin—19,500 miles in 21 days, 7 hours, 26 minutes, with 61 crew and passengers under Commander Eckener (August 8–29, 1929); World's Largest Flying Boat, Dornier DO-X, flies over Lake Constance, Switzerland, with 169 passengers and crew (October 21, 1929); Flight from Paris to Manchuria—4,950 miles is made by Coste and Bellonte (September 27–29, 1929) and return—World's Distance Record.

"The World's Great Adventure" now takes place: First Flight over the South Pole (November 28–29, 1929) by Commander Richard Byrd, who three years before made the First Flight over the North Pole. Byrd's voyage over the Bottom of the World, and back to Little America—1,600 miles in 18 hours, 41 minutes—is made with Balchen, June and McKinley. World flights close the historic year with Challes and Larre-Borges flying from Spain across the South Atlantic to Uraguay, crashing in a Brazilian jungle and rescued (December 17–18, 1929).

Historic Events inaugurate the next decade of the Aerial Age (beginning 1930). Amy Johnson, "English Girl Lindbergh," receives great ovations for First Solo Flight of a Woman between England and Australia (May 5–24, 1930); Glenn Curtiss commemorates 20th Anniversary of first distance flight in America by re-tracing route in a great modern airplane from Albany to New York (May 31, 1930); two months later the great scientist-inventor dies in Buffalo (July 23, 1930). Kingsford-Smith, with three companions, crosses the Atlantic (June 24–25, 1930) and then the American Continent, thus completing his flight around the world. British Airship R-100 makes first voyage from England to Canada (July 29–August 1, 1930) and returns to London.

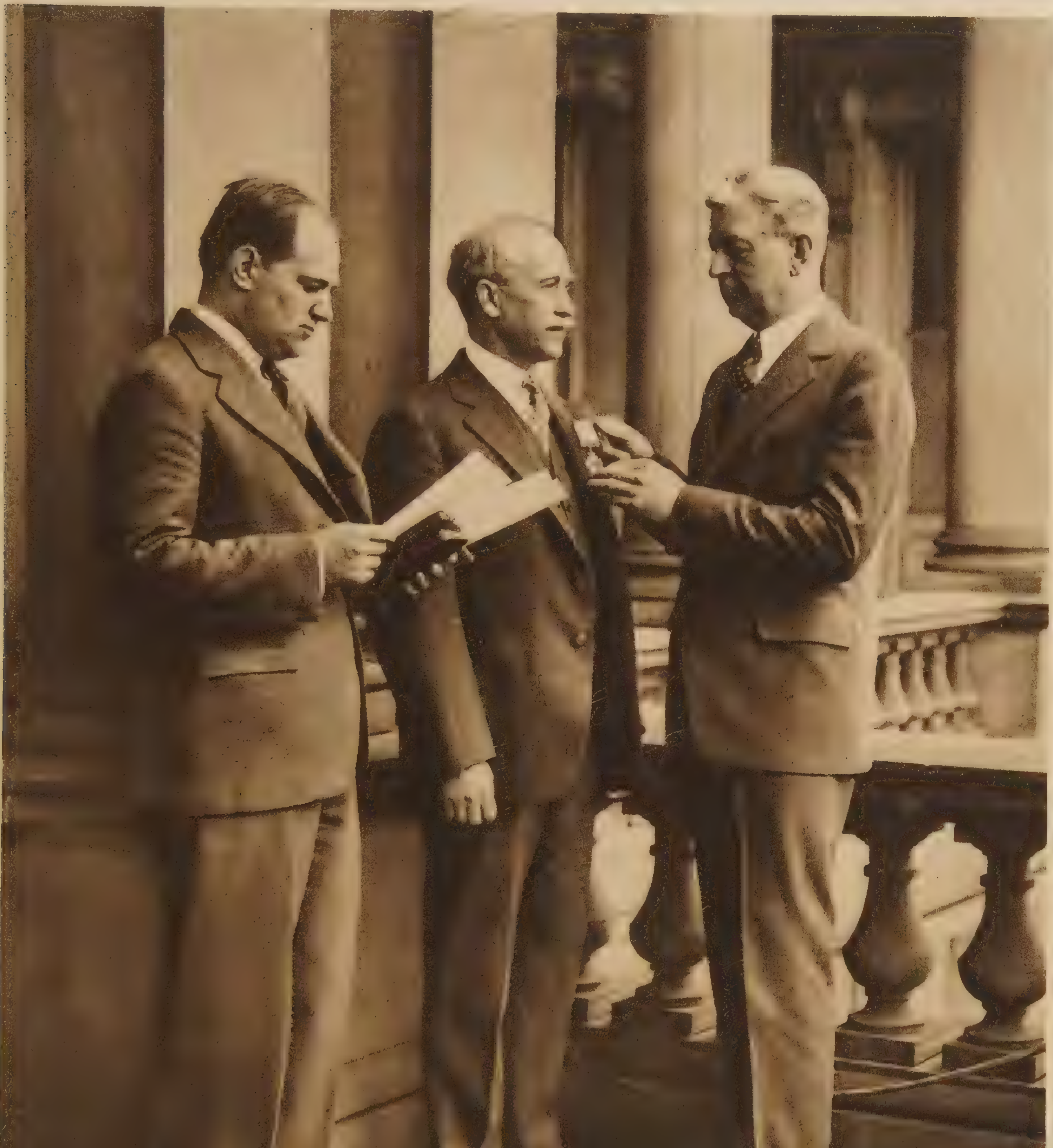
The great Andrée Mystery is solved after 33 years when the bodies of Andrée, Strindberg, Fraenkel, first men to attempt to fly to the North Pole in a balloon, are found on White Island (August 6, 1930). German Argonauts under Captain von Gronau fly to America from Germany, via Iceland, Greenland, Labrador, Halifax, reaching New York (August 26, 1930). Coste and Bellonte arouse the world with First Flight from Paris to New York (September 2–3, 1930) and then make Good-Will Tour through the United States. The Graf Zeppelin makes historic voyages over Eastern Hemisphere. The R-101 tragedy on its flight to India, casts sorrow over the nations (October 4, 1930), while Dornier's DO-X, "World's Greatest Airplane," (see Vol. I—pages 20-21) makes new world records. The decade (1930) begins with new altitude and endurance records and epochal flights on the five continents.

CAPT. SIR HUBERT WILKINS AND LIEUT. CARL BEN EIELSON (Above) further distinguished themselves by the first airplane flight over the Continent of Antarctica (December 20, 1928). Ten hours in the air, they explore and map 100,000 square miles of the Antarctic for geographical science. Eielson (left) and Wilkins (right). Underwood Collection.

TWENTY-FIFTH ANNIVERSARY OF THE WRIGHTS' FIRST FLIGHT at Kitty Hawk, North Carolina, (December 17, 1928) was celebrated with impressive ceremonies on the historic sand dunes where a monument was dedicated by the National Aeronautic Association and the first steps toward erection of the memorial lighthouse pictured at the beginning of this volume. In the picture (below) Orville Wright, the surviving brother, stands at the left of the tablet—U. S. Senator Hiram Bingham, President of the National Aeronautic Association, and Amelia Earhart (right).

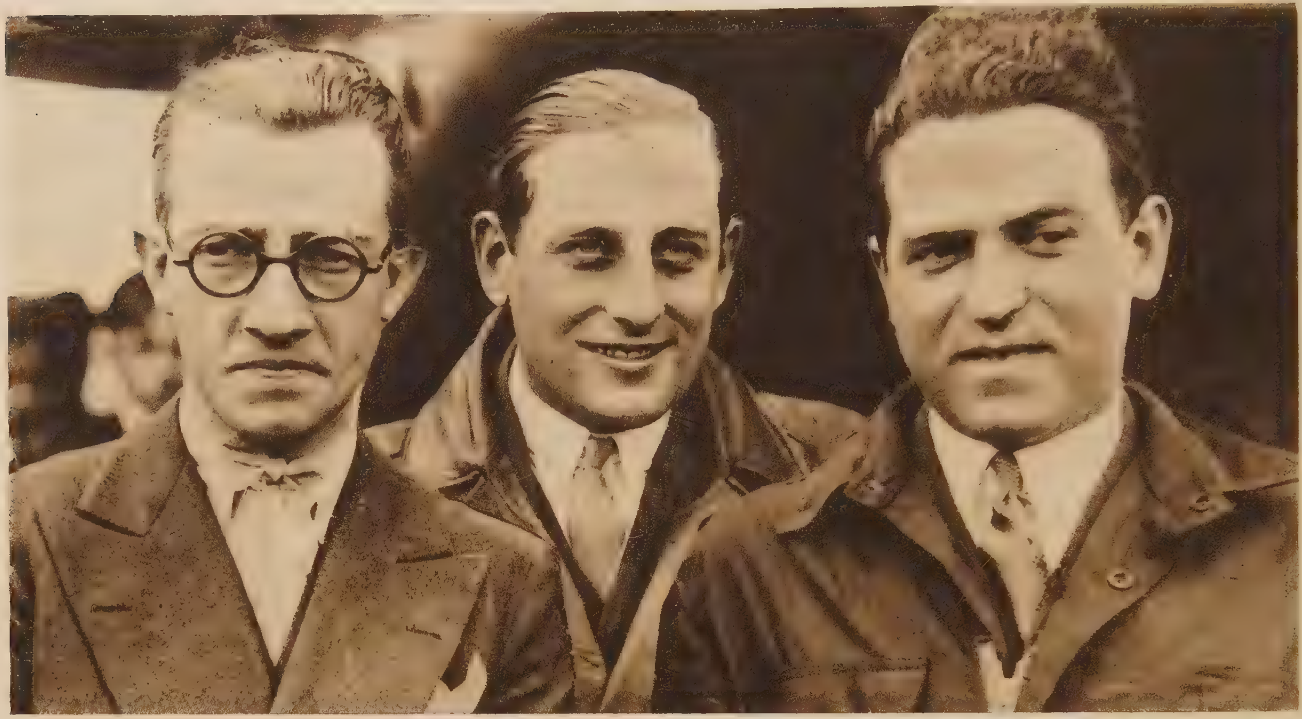
THE FIRST SUCCESSFUL FLIGHT
OF AN AIRPLANE
MADE FROM THIS SPOT BY
ORVILLE WRIGHT

AMERICAN *Government Bestows Distinguished* FLYING CROSS



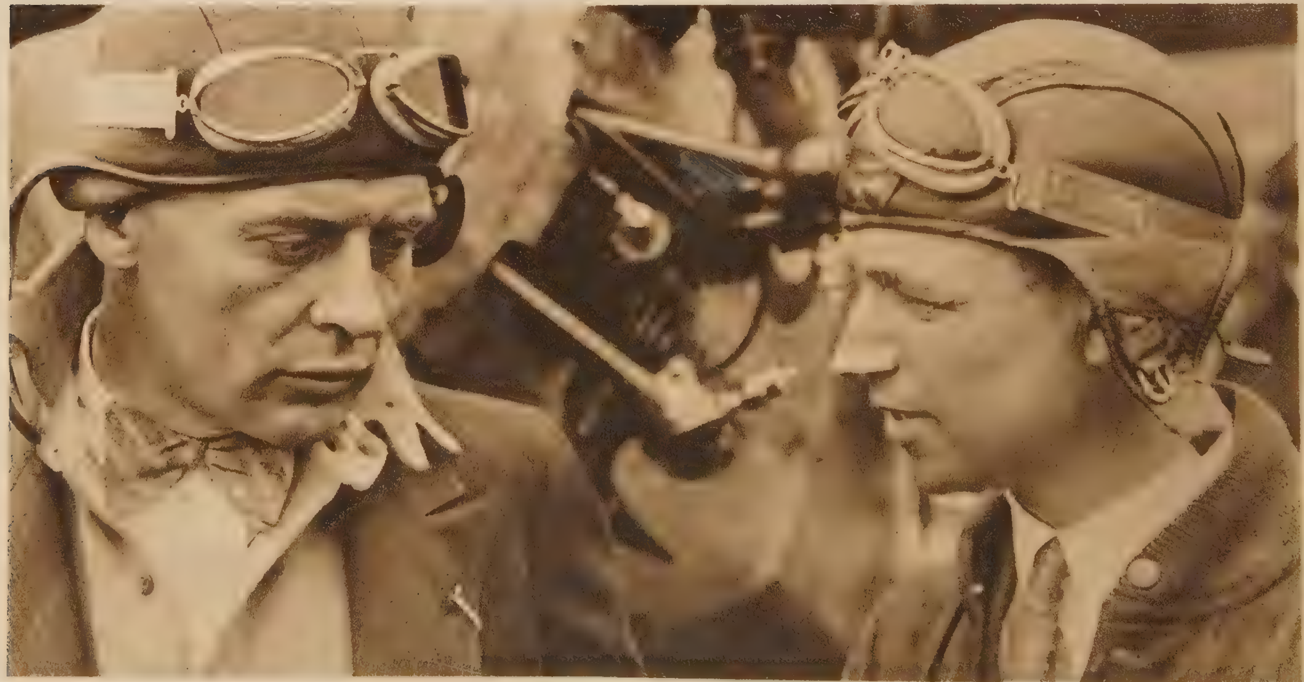
WRIGHT ANNIVERSARY CEREMONIES were celebrated (1928) with a great memorial dinner in Washington, where an International Aviation Conference was in session, and with a banquet in London. Here we see Secretary of War Davis (right) conferring upon Orville Wright (center) the honor of the Distinguished Flying Cross—Hon. F. Trubee Davison, Assistant Secretary of War for Aeronautics (left).

Historic FLIGHTS: *America to* PARIS—*America to* ROME—1929

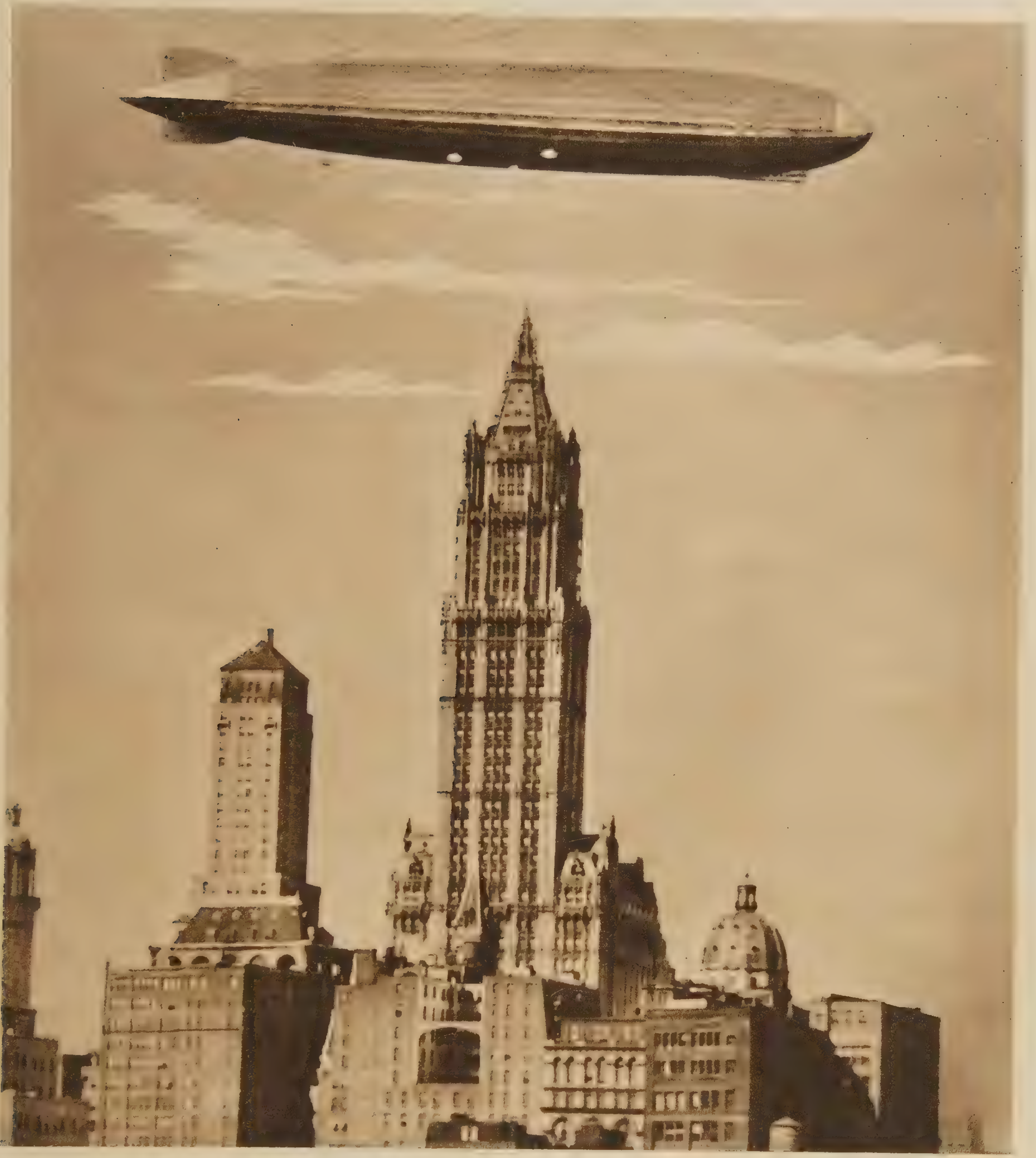


JEAN ASSOLANT—RENE LEFEVRE—ARMENO LOTTI (Above)—These three intrepid French fliers flew from Old Orchard, Maine, to Comillas, Spain, and later to Paris, their objective (June 13-16, 1929). Their transatlantic flight of 3,128 miles was made in 29 hours, 52 minutes. The weight of an uninvited stowaway burdened their plane and they were forced down by fuel shortage.

CAPT. LEWIS A. YANCEY AND ROGER Q. WILLIAMS (Below) were first to fly from America to Rome (July 8-10, 1929). They left Old Orchard, Maine, and flew 3,400 miles over the Atlantic to Santander, Spain, in 31 hours, 30 minutes, being compelled to come down by fuel shortage caused by fighting unexpected head winds. Next day they flew on to Rome, where they received a rousing reception. Yancey (left); Williams (right). Underwood Collection.



FIRST AIRSHIP *Voyage* AROUND *the* WORLD—1929



GRAF ZEPPELIN GIRDLES THE GLOBE—This giant German airship which first crossed the Atlantic to America (October 11-15, 1928) and returned to Friedrichshaven (October 29-November 1), returned here (August 1-4, 1929). Then, with 20 passengers, including Lady Drummond Hay of England, Sir Hubert Wilkins, Commander Charles E. Rosendahl, U.S.N., and representatives of the Russian and Japanese governments—41 officers and men in her crew—she was the first airship to sail around the world from west to east from Lakehurst, New Jersey, and return. She visited her home port in Germany and crossed Siberia to Tokio, Japan, and Los Angeles, California, en route—making the 19,500-mile journey in 21 days, 7 hours, 26 minutes (August 8-29, 1929). Then Dr. Hugo Eckener, her gallant commander, turned the big ship over to Capt. Ernst Lehmann, noted airship commander, who took her home to Germany. Photograph in International Collection.

COMMANDER BYRD IN HIS ANTARCTIC FULL DRESS

FIRST FLIGHT OVER SOUTH POLE—1929

REAR ADMIRAL RICHARD E. BYRD (pr moted from Commander by special Congression enactment) established himself as the "World' Greatest Aerial Explorer" by the first airplane fligh over the South Pole (November 28-29, 1929), thus bein first to circle both poles by air. With him were Bern Balchen, pilot—Harold I. June, co-pilot and radi operator—and Capt. Ashley C. McKinley, aeria photographer.

This epochal flight climaxed the year-and-a-half sta of Byrd's Antarctic Expedition at "Little America, its base on the ice barrier by Ross Sea, during whic many shorter flights were made to map portions of th Continent of Antarctica. The quartet left "Littl America" at 10.29 P.M. (New York time); their heavily laden plane surmounted the perilous, towering peaks the coastal mountain range through Balchen's masterf piloting. They reached the South Pole at 8.55 A.M next morning; and returned triumphant to "Littl America" at 5.10 that night, having stopped for a hour at a base near the Pole.

In continuous radio communication with "Littl America," their messages were relayed at once t New York, which was in constant touch by radio wi Byrd's Antarctic village during its entire existenc America and the world knew almost to the minute whe Byrd flew over the bottom of the earth.

We present (left) Commander Byrd holding th American flag and a stone from Floyd Bennett's grav which he dropped at the South Pole; (top of page) th Byrd plane about to start. Photographs in Paramou News Collection.

BERNT BALCHEN

CAPT. ASHLEY C. McKINLEY
Photographs in Wide World Collection

HAROLD I. JUNE

REAR ADMIRAL BYRD AT PANAMA WITH HIS DOG "IGLOO"—EN ROUTE HOME
Photograph in Byrd's Personal Collection.

ONE OF THE WORLD'S GREATEST FLIERS—SQUADRON LEADER CHARLES KINGSFORD-SMITH

WE meet him again (second figure above) after his remarkable westward flight across the Atlantic (June 24-26, 1930), starting in Ireland, coming down through a dense fog at Harbor Grace, Newfoundland—flying on to New York—and then across the Continent to San Francisco—thus completing the "Round the World Flight of the Southern Cross." With him above are his Atlantic comrades (left to right): J. P. Saul of Ireland—Kingsford-Smith of Australia—Evart Van Dyck of Holland—J. W. Stannage of England. Returning to England, Kingsford-Smith started on his flight from London (October 8, 1930) for his home in Australia.

CURTISS CELEBRATES 20TH ANNIVERSARY OF HIS HISTORIC ALBANY-NEW YORK FLIGHT

GLENN H. CURTISS, gallant pioneer of American aeronautics, re-flew his historic Albany-New York flight in a great modern plane on its Twentieth Anniversary (May 31, 1930) as his last public appearance. Two months later (July 23) the great inventor-scientist suddenly passed away in Buffalo. As his last official act, he had autographed the Pioneer's Edition of "The World in the Air." Photograph shows Mr. and Mrs. Curtiss with Capt. Horace B. Wild and a youthful admirer. Acme Collection.

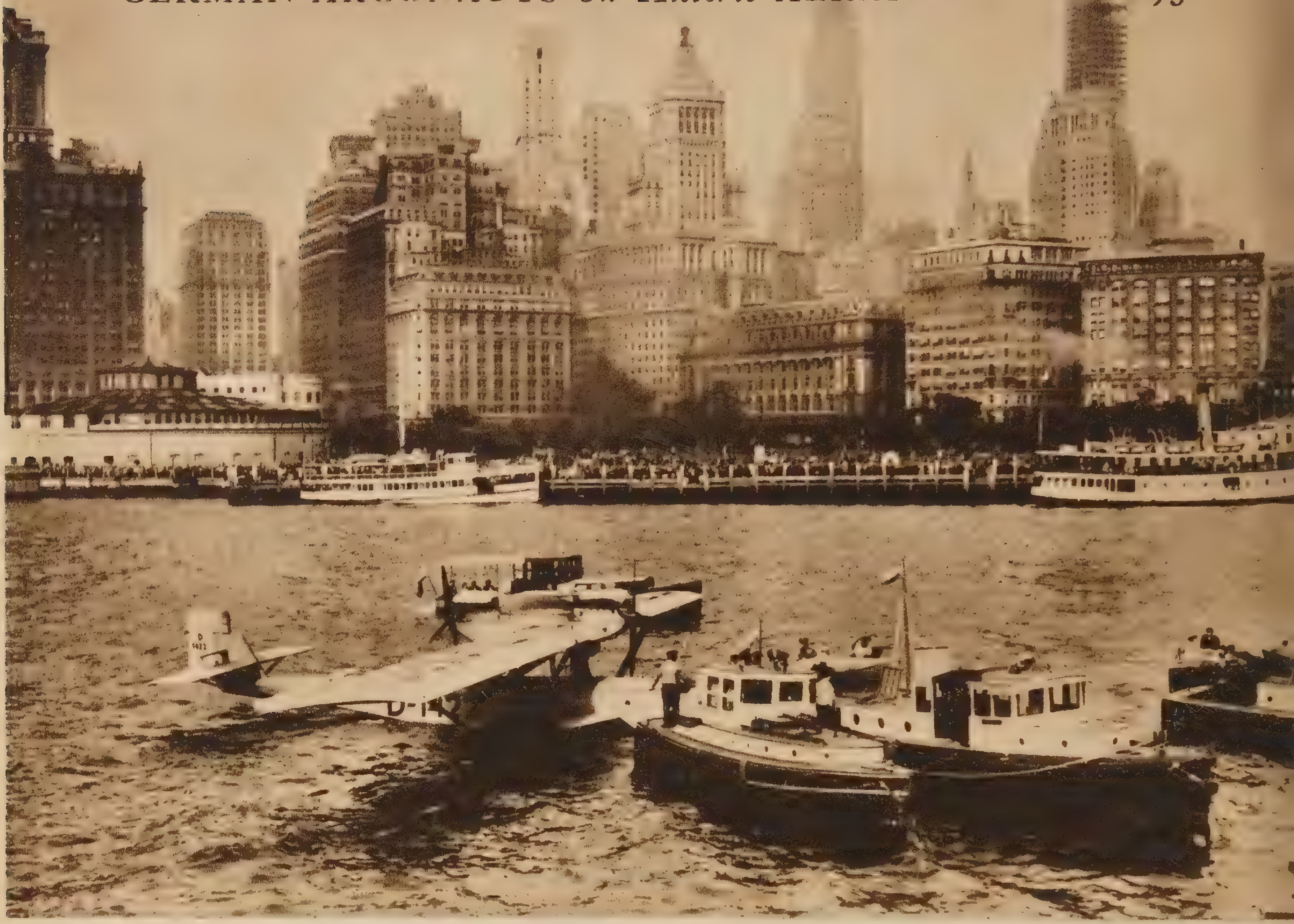
GREAT AERIAL EVENTS *in* BRITISH EMPIRE—1930

R-100—BRITISH AIRSHIP (Above), which made the first airship voyage from England to Canada (July 29-August 1, 1930). She landed at Montreal, then visited Toronto and Ottawa, and returned to London (August 13-16). See record Vol. 1—pages 20-21.

AMY JOHNSON (above)—The English "Girl Lindbergh." She made the first solo flight by a woman between England and Australia (May 5-24, 1930). We see her here responding to the tremendous ovation which greated her on her return to London.

SIR ARTHUR WHITTEN BROWN (left) dedicates the monument to the achievement of Amelia Earhart, "First Woman to Fly the Atlantic," erected by the citizens of Burry Port, Wales, where she landed. Sir Arthur, with Sir John Alcock, was first to make a Non-stop Transatlantic Flight.

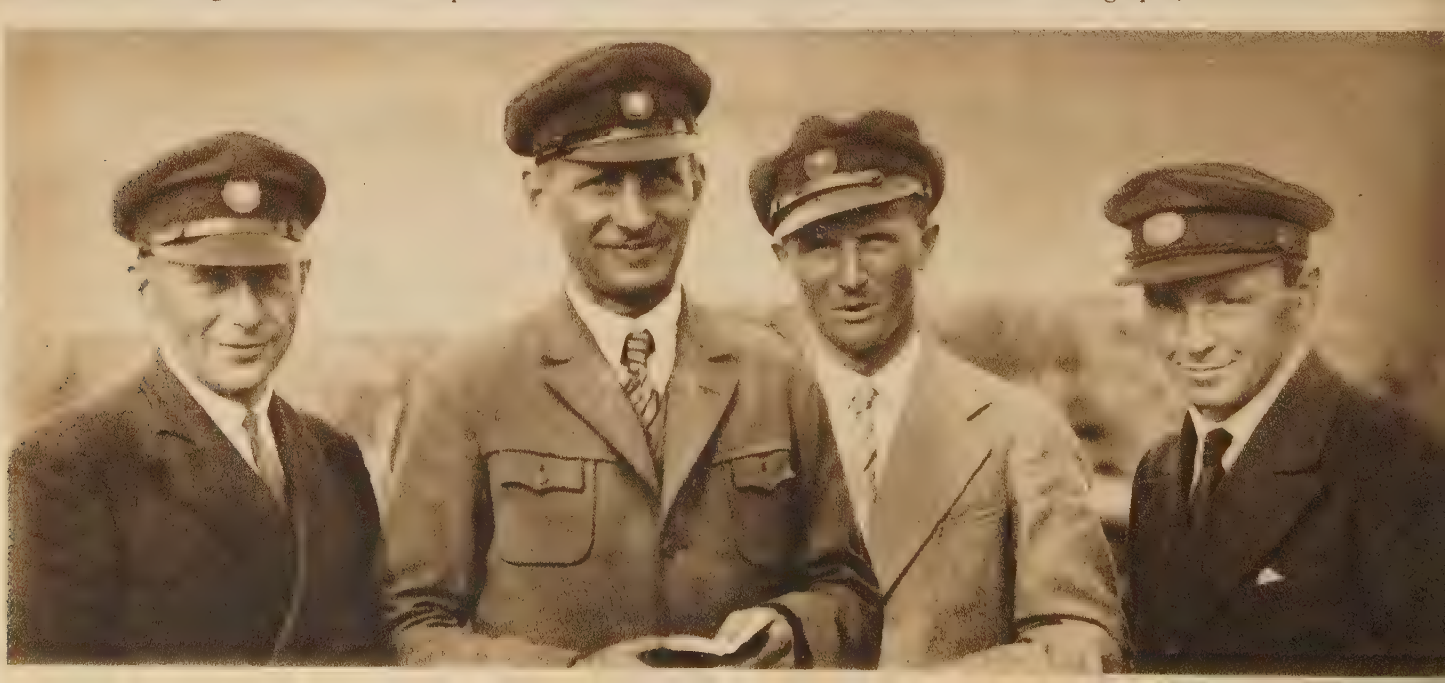
GERMAN ARGONAUTS *On Historic* AERIAL CRUISE—1930



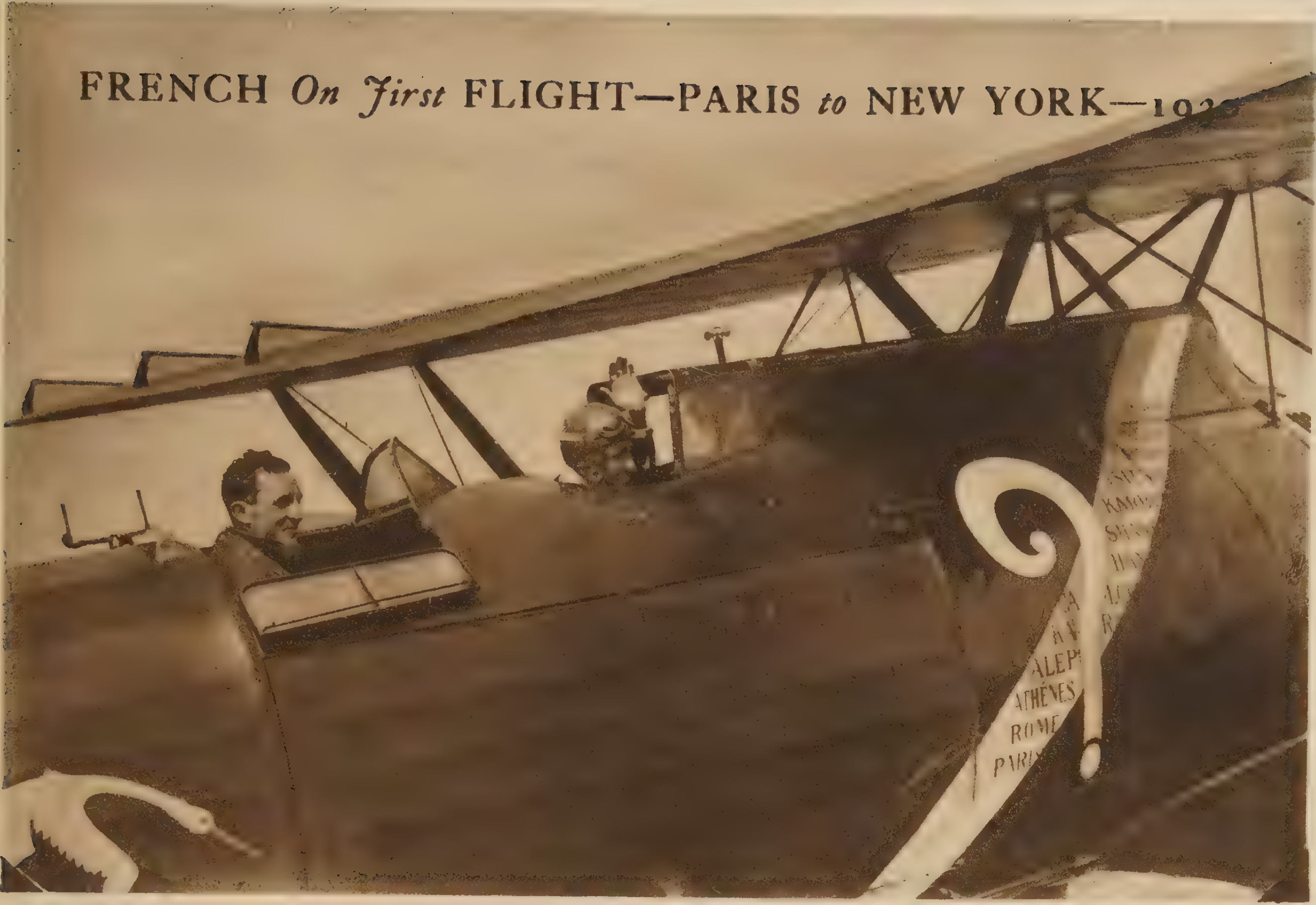
GERMAN VOYAGERS OF THE AIR ARRIVE IN THE NEW WORLD METROPOLIS

CAPT. WOLFGANG VON GRONAU OF GERMANY, with his three comrades: Franz Hack, mechanic and radio operator—Edward Zimmer, student aviator—and Fritz Albrecht, radio operator—reached New York (August 26, 1930) after a remarkabl flight from Germany via Iceland, Greenland, Labrador and Halifax. They were enthusiastically received and shown municipa honors by Mayor Walker, of the City of New York, and the American Government.

We present their aerial craft (above) just after its arrival off the Battery. In the group (below) the intrepid Teuton fliers are show as follows: Left to right—Franz Hack—Captain von Gronau—Edward Zimmer—Fritz Albrecht. Photographs, International Collection



FRENCH *On First* FLIGHT—PARIS *to* NEW YORK—19

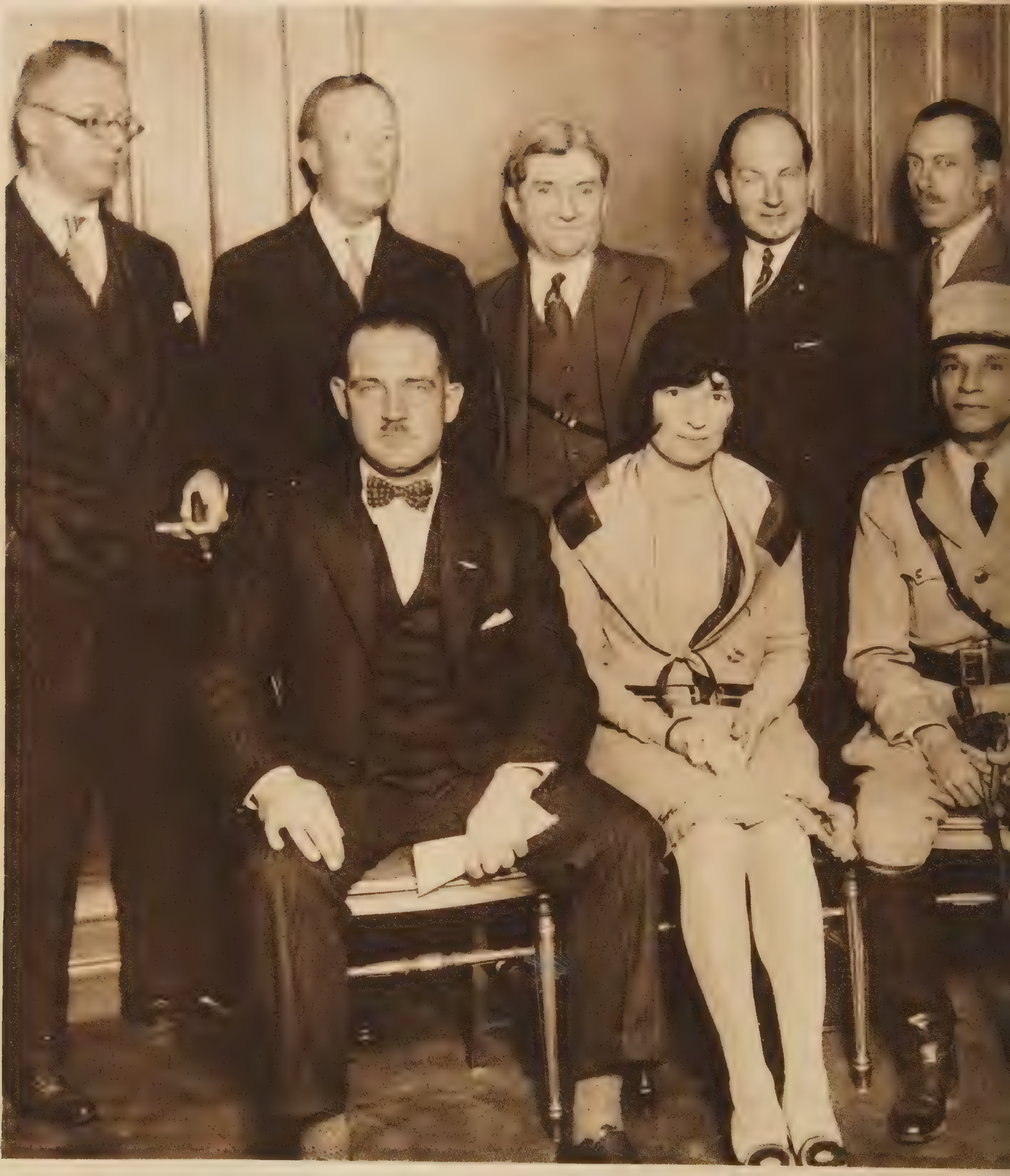


THE FIRST AIRMEN TO DROP DOWN ON NEW YORK FROM PARIS WITHOUT STOP
Photograph in Pacific and Atlantic Collection

DIEUDONNE COSTE AND MAURICE BELLONTE, French fliers par excellence, were first to fly straight across the Atlantic Ocean direct from Paris to New York (September 2-3, 1930). They made the westward air passage over the Atlantic Ocean from Le Bourget Field in Paris to Curtiss Field at Valley Stream in 37 hours, 17 minutes, in the airplane "Question Mark." Leaving Le Bourget at 12.54 A.M. (September 2) (5.54 A.M. New York daylight time) and, after swooping down over Roosevelt Field to wave greetings, came gracefully to earth at Valley Stream (September 3) at 7.11 P.M. An outburst of enthusiasm greeted them. In New York City, they received a tremendous ovation. Immediately they flew to Dallas, Texas, to win the $25,000 offered by Col. W. E. Easterwood of that city for a flight from Paris to Dallas; then returned to New York and flew to Washington for their reception by President Hoover at the White House (see page 326). Their "Good Will" tour through the United States resulted in historic tributes from the American people.

FRENCH FLIERS RESPOND TO
NEW YORK'S GREAT GREETING

COSTE
WHALEN
BELLONTE



"EARLY BIRDS"—TRAIL BLAZERS OF THE SKIES—THEIR HONOR ROLL INCLUDES 280 PIONEERS OF THE NEW AGE—These pages are in tribute to the "Early Birds," the courageous explorers of the skies who led the way for the greatest era of human progress the world has yet known. This organization was founded in America as a fraternity for "pilots who flew during the first decade of practical flight." The official photograph recorded here shows the founders as they met in Chicago (December 17, 1928) on the Twenty-Fifth Anniversary of the First Flight of the Wrights at Kitty Hawk. Fliers who soloed in America before December 17, 1916, and in Europe before the World War, are eligible for membership. The "Early Birds" now number 280 of the world's most famous pioneer pilots. The "Early Birds" organizers shown above are (left to right, standing) Major Ernest L. Jones—Col. Charles de F.Chandler, Capt. Horace B. Wild —Anthony H. B. Fokker—L. A. Vilas—Dr. H. W. Walden—Richard H. Depew, Jr.—Charles Dickinson. (Seated) Ivan J. Gates—Marjorie Stinson—Capt. J. F. de Villard—P.G.B. Morris. Earle Ovington is president (1930); the first officers were P. G. B. Morris, president; Gen. B. D. Foulois, A. H. G. Fokker and J. F. de Villard, vice presidents; Lt. Com. H. C. Richardson, U.S.N., treasurer; Maj. Ernest L. Jones, secretary; Richard H. Depew, Jr., Dr. H. W. Walden, Raffe Emerson, Walter R. Brookins and Earle Ovington, governors.

WORLD'S FAMOUS PIONEER FLIERS—The "Early Birds" are worthy of a great book by themselves—the records of the 280 pathfinders of the New Age. We would call attention to the "Patriarch of the Early Pilots" tanding at the right—Charles Dickinson. Over 70 years of age, he was one of the early financial powers behind the development of the Aerial Age. The backer of many famous pilots, he was one of the organizers of the 'Early Birds," although not eligible for active membership himself. Charles Dickinson's pilots carry the Air Mail from Chicago to Minneapolis. "Speed" Holman, winner of the Thompson Trophy at the Chicago Air Races 1930—see page 324) is a Dickinson pilot. Charles Dickinson is a licensed pilot imself and has taken the "mail through on time." Horace Wild Collection.

The AERIAL AGE *and Its* PROGRESS

THE PROGRESS of the Aerial Age, as we have witnessed it in these pages, is opening for mankind its greatest era. Its vast possibilities are beyond calculation. Inventive genius, with the power of finance behind it, is re-making the world.

The landmark (1930) finds the human race flying more than 500,000,000 miles a year in all parts of the world—twenty thousand times around the earth. "A Billion Miles a Year" is the next goal.

More than 400,000 people, directly and indirectly, are engaged in this new system of transportation throughout the world; more than 100,000 pilots of all nations are flying; more than 7,000,000 passengers are being carried.

Charted air routes over the earth (1930) exceed 115,000 miles. Europe, including Russia, is operating 50,000 miles; North and South America over 65,000 miles

The United States has 40,000 miles of airways in regular operation with more than 10,000 miles lighted for night flying. About 2,500 cities and towns have modern airports and the number is growing with great rapidity.

Government records state that air transportation in the United States alone exceeds 250,000,000 miles a year (1930). Over 60,000,000 miles are being flown by Government services; and 190,000,000 by civil and commercial fliers. Scheduled air transport on regular routes has reached 25,000,000 miles annually, with Europe on about an equal basis.

More than 500,000 passengers are flying on regularly scheduled commercial airlines on the two continents; Governments with their army, navy and airmails, with privately operated planes, civil and commercial, bring the grand total to 7,000,000 passengers.

In the United States alone more than 3,000,000 passengers are flown from point to point outside the regular air transport lines. These independent planes cover more than 100,000,000 miles annually.

More than 1,000,000 miles are flown for every fatal accident on regular air transport lines. Air transport in the United States has grown 500 percent in five years, while the amount of invested capital in the aviation industry has grown from $5,000,000 to $500,000,000.

The World's Speed Record (1930) is held by Olebar, of England—368.80 miles an hour—made the preceding year. World's Altitude Record is held by Soucek, an American Navy flier—43,166 feet (June 4, 1930).

The New
CIVILIZATION

CONTINENTS and Oceans are being conquered. Great Events are taking place with such rapidity that it will require many future volumes to record them.

Great passenger, mail and express planes are flying 100,000 miles (four times around the earth) every twenty-four hours in the United States alone, serving a territory with 100,000,000 population.

The Flying Mail is one of the greatest public services in the world today. Airplanes convey between New York and Chicago, the nation's two leading financial centers, more than $5,000,000 every day in negotiable securities and untold millions in bank checks for immediate clearance.

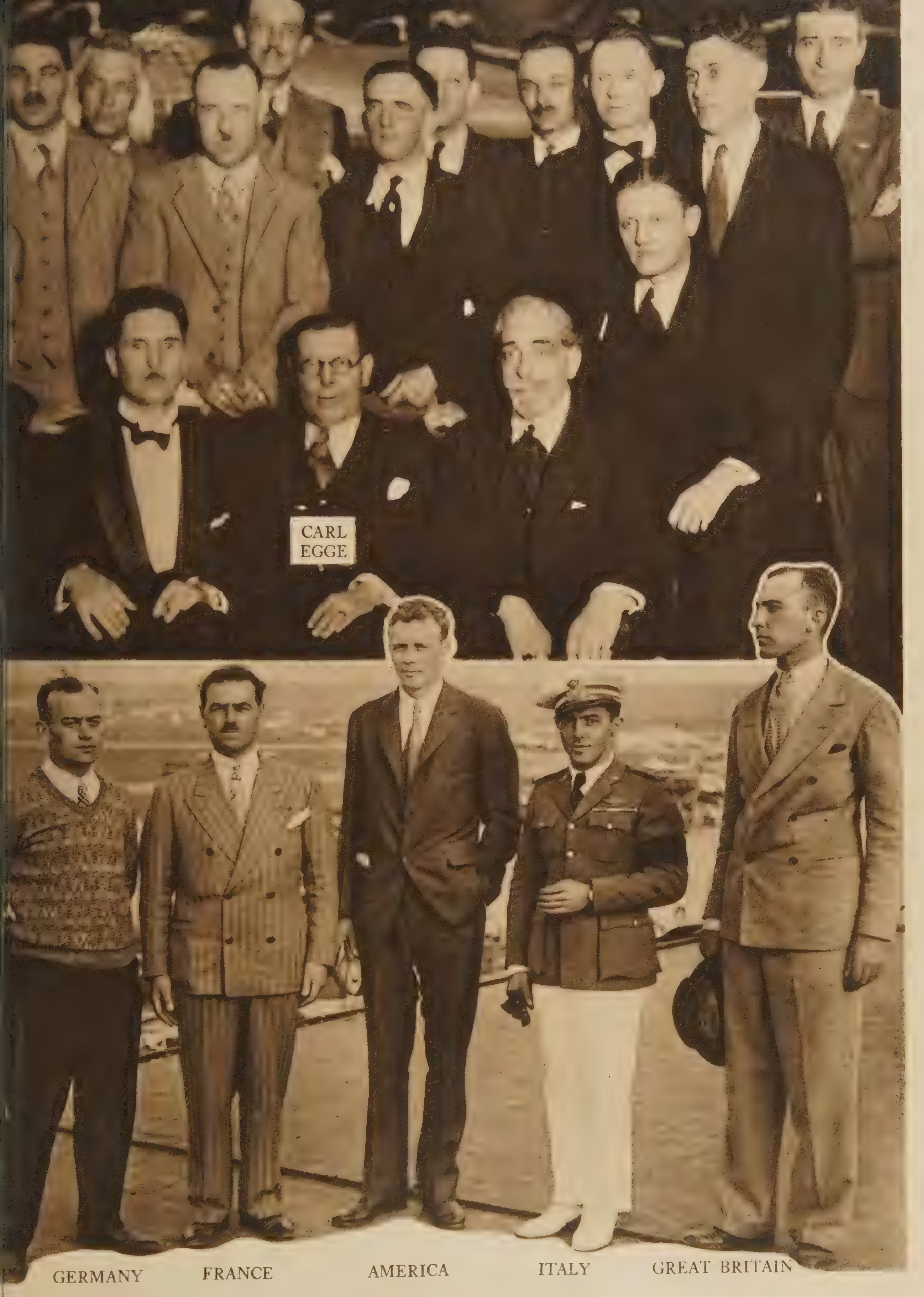
And the Aerial Age is just beginning.

THOMPSON
TROPHY
Won By
CHARLES
HOLMAN
Chicago
1930

HAMILTON LEE
World's Record
14,500 Hours
1,400,000 Miles

FAMOUS PIONEERS OF THE AIR MAIL—This historic photograph shows a group of Early Air Mail Pilots at a gathering of the National Air Pilots Association in New York. This organization includes 1,200 members. Carl F. Egge, executive officer, with these boys founded "the greatest Air Mail Service in the world." E. Hamilton Lee (above) holds the world's record of 14,500 hours flying time, and 1,400,000 miles flown. Also included in the above group are the following pioneer Pilots—Major Robert L. Copsey, Roger Q. Williams, Russell Jones, David M. Logg, Wesley L. Smith, C. E. Johnson, Shirley J. Short, Dr. R. E. Bussler, George Pomeroy, Leo Katzman, J. Ordway Webster, Charlie Stanton, R. S. Fogg, William N. De Wald, Capt. Horace B. Wild, J. C. Edgerton, Augustus Post, Earl F. Ward. The N.A.P.A. has but two honorary members—Hon. Harry S. New and Will Rogers. Photograph in Horace Wild Collection.

GREAT FLIERS OF FIVE NATIONS—Official Photograph (right) was taken at the National Air Races in Chicago (1930). We see here (left to right) Fritz Lohse of Germany—Marcel Doret of France—Colonel Charles A. Lindbergh of the United States of America—Petro Columbo of Italy—Lieut. R. Atcherly of Great Britain. Photograph in Pacific and Atlantic Collection.


CARL EGGE
GERMANY
FRANCE
AMERICA
ITALY
GREAT BRITAIN

The WORLD *in the* AIR

AMERICA'S GREETINGS– To the Nations of the World and to Every Man and Woman who has been factor in the inauguration of this New Age, we extend our greetings in behalf of all the Aeronautical organizations that have co-operated in this Memorial Record.

PRESIDENT HOOVER EXTENDS HIGHEST HONORS to the Great Fliers of all Nations. We see him at the White House as he welcomes the famous Frenchmen—Coste and Bellonte. Official Photograph (left to right): Jules Henry, Charge d'Affaires of French Embassy—Colonel Charles A. Lindbergh—James J. Davis, Secretary of Labor—Captain Dieudonne Coste—Vice-President Charles Curtis—President Hoover—Colonel Clarence Young, Assistant Secretary of Commerce for Aeronautics—Maurice Bellonte, navigator of the "Question Mark"—General John J. Pershing—F. Trubee Davison, Assistant Secretary of War for Aviation—Rear Admiral Richard E. Byrd—and Captain Eddie Rickenbacker, America's foremost war ace. Acme Collection.

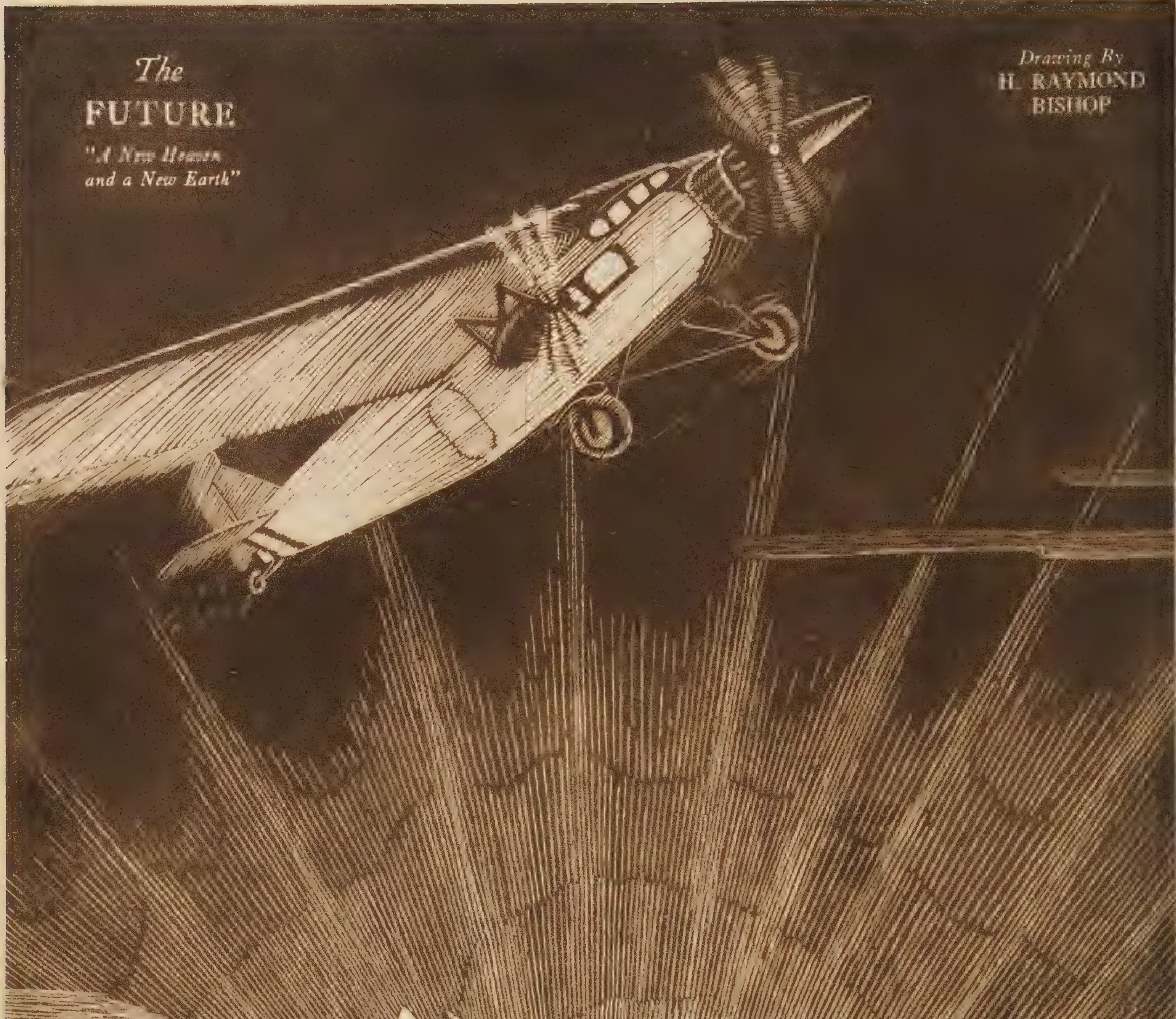
Rear Admiral
WILLIAM A. MOFFETT

WORLD RECORDS—America's speed record (1930) Captain Frank Hawks (right)—Transcontinental Non-Stop between New York and Los Angeles—Westbound 13 hours, 35 minutes, 43 seconds (August 7 1930): Eastbound 11 hours, 30 minutes, 40 seconds (August 14, 1930). World's Altitude Record—for airplane—Lieutenant Apollo Soucek, U. S. N (left)—43,166 feet (June 4, 1930).

Major General
JAMES E. FECHET

WE HAVE COMPLETED OUR JOURNEY—We have passed in documentary record through more than 5,000 years of courage and daring in man's "Conquest of the Air," following it from its most primitive origin up through the centuries.

Today, we find vast systems of Aerial Transport reaching out to all parts of the earth. Giant ships are sailing the skies. Great Events are before us. Time and space are being conquered with new world records in speed and altitude. Man, at last, has broken his bondage from the earth. The "Dream of the Ages" has come true.


The
FUTURE
"A New Heaven
and a New Earth"
Drawing By
H. RAYMOND
BISHOP

What is to be the next Great Epoch in Human Progress? We can reach but one conclusion: "The whole World united

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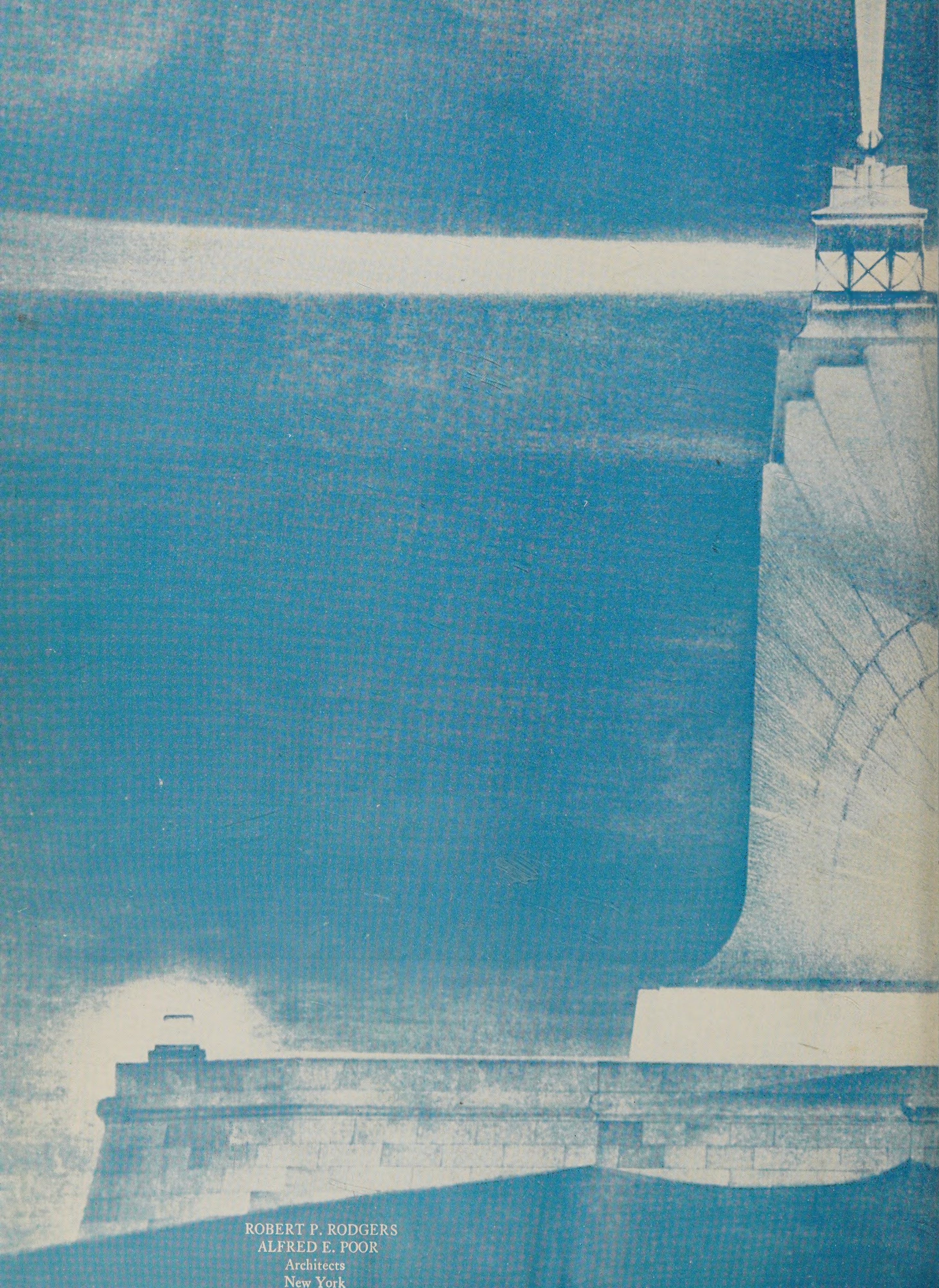

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